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SYPHILIS AND LIFE INSURANCE

WITH SPECIAL REFERENCE TO THE WASSERMANN AND LUETIN REACTIONS *

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PHILADELPHIA

The question of the relation of syphilis to insurance resolves itself into a discussion of the direct and primary influence of this disease and its visceral lesions on the duration of life itself, and its influence on bodily resistance toward other diseases and deleterious influences. It is universally acknowledged that persons infected with syphilis are more liable to other diseases than persons who are not, and while syphilis itself may not in the majority of cases actually threaten life in its early stages, it is generally known that its late manifestations may.

As far as I am aware, the majority of life insurance companies inquire of each applicant for insurance whether or not he or she has been infected with syphilis, and accept their answer together with the results of a physical examination by a physician as satisfactory replies. Those persons who know that they have been infected and answer accordingly, or who present the lesions of syphilis with sufficient distinctness to be recognized clinically by the medical examiner, are either rejected or accepted with a higher rating, the insurance company realizing the greater risks incurred in accepting the syphilitic for insurance. But it is well known that applicants deliberately deny or suppress the fact that they have been infected, or they may have truthfully forgotten this incident in their lives and answer negatively. Not a few persons, especially women, are ignorant of having been infected, and in others the lesions and symptoms may have been extragenital or so mild in character as to mislead even persons of superior intelligence as to their true significance, so that denial of syphilis is honest and sincere. Further than this, some companies ask only for a medical history within a certain number of years, which may easily exclude the time of syphilitic infection.

If, therefore, an applicant for insurance denies or is ignorant of being syphilitic, the company must rely on the results of the medical examination by a physician; while the average practitioner may readily enough diagnose syphilis presenting primary and secondary lesions, and strongly suspect syphilis in the presence of symptoms suggestive of tertiary lesions, he may be unable to detect the disease in the latent and tertiary stages, especially if the applicant appears in good health and denies infection and physical ailments and symptoms.

Accordingly, if experience and statistics have taught insurance companies the importance of syphilis in relation to duration of life, risk of intercurrent infection, ratings, etc., it is clear that a concerted effort should be made to detect the disease under conditions independent of the answers of the applicant and the results of physical examination, especially when the applicant is seeking a heavy insurance policy.

It is beyond the scope of this paper to discuss with any detail the question of the relation of syphilis to organic disease, especially of the nervous and cardiovascular systems and its direct bearing on duration of life; instead, I shall endeavor to point out these relations in a general way and confine myself more strictly to the present status of the specific diagnosis of syphilis, especially in the occult stages, by the complement fixation or Wassermann, and the anaphylactic or luetin, tests.

The question of frequency of syphilis is of minor importance in relation to insurance, as it has no direct bearing on any one applicant for insurance, and our figures bearing on this subject require revision in view of the results of the application of the Wassermann reaction in the diagnosis of this disease. Statistics, however, long since taught insurance companies the necessity of exercising some care in accepting syphilitics for insurance. The disease is from three to eight times more prevalent among the better than among the lower classes, although this may be apparent only because the former are more likely to seek medical attention; and it is also more prevalent among those persons living in cities than in the country districts. It has been variously estimated that from 10 to 20 per cent. of applicants for insurance have been infected with syphilis (the lower figure being probably nearer correct), and that the majority of men are infected before the twenty-third, and women before the twentieth, year of age.

The relation of syphilis to duration of life bears a more or less direct relation to the question of treatment. Virulent infection, especially of the immature and debilitated, may destroy life in a comparatively short time; in any event, the expectation of life among syphilitics must be shortened. Bramwell has estimated that the duration of life in cases of tertiary syphilis is shortened by ten years, and the general experience among insurance companies is to the effect that the disease has a heavy extra mortality at comparatively

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early ages, and that they have suffered considerable loss by them.

Cases of untreated syphilis are almost certain to develop late or tertiary lesions; on the other hand, syphilis is a curable disease in the majority of cases, especially when vigorous and proper treatment is instituted early in the disease. Treatment, therefore, has a very important bearing on the relation of syphilis to insurance; some companies refuse to accept the syphilitic applicant until three years have elapsed since infection, two of which must be spent under vigorous and intelligent treatment with mercury or salvarsan, and the third year under observation, during which time the person is free from symptoms of the disease. Patients receiving treatment by iodids only are regarded as bad risks; likewise alcoholics and free livers.

Our knowledge regarding the treatment of syphilis, however, has been altered very materially since the discovery of the complement fixation test for this disease and of salvarsan in its treatment. Arbitrary rules regarding treatment cannot be laid down, and, as I shall point out later, one of the greatest values of the Wassermann test is its application as a control on treatment. Briefly stated, therefore, the kind and duration of treatment, and particularly the stage of the disease when treatment is instituted, have a very important bearing on the question of risk in insuring the syphilitic; and as far as I am aware, the Wassermann reaction conducted under proper conditions and by properly qualified persons is the best index of the efficiency of any form of treatment, especially in the secondary, latent and tertiary stages.

In view of the recent researches in syphilis disclosing the *Spirochaeta pallida* in the tissues in tertiary lesions, it is very doubtful whether it is permissible to speak of the sequelae of syphilis. The toxins and other products of the spirochetes may produce degenerative changes in various organs, but it is more likely that the late consequences of a syphilitic infection, as aneurysm, aortic insufficiency, arteritis, etc., may be direct lesions of syphilis due to the presence of living spirochetes rather than sequelae in the truer meaning of the term. Noguchi and Moore, Nickols, Wile and others have demonstrated the microparasites in the brain and spinal cord of paresis and tabes dorsalis, thereby rendering obsolete the terms "parasyphilitic" and "pseudosyphilitic," and Warthin and others have likewise shown the parasites in the heart and vessel walls even in those who during life were regarded as cured. It is probable that there are different strains of the *Spirochaeta pallida* with different tissue affinities; thus a certain strain may have a selective affinity for the tissues of the central nervous system, and its host show the results of early or precocious involvement of these tissues; another strain may have a selective affinity for the cardiovascular system; another for the bones and periosteum or the skin and mucous membranes, etc., the seriousness of an infection depending on the question of strain infection. Thus the older syphilographers taught that persons showing well developed cutaneous lesions were less likely to develop lesions in the internal organs and were more amenable to treatment.

Among the later and more serious manifestations of syphilis affecting the central nervous system, not infrequently at a comparatively early age, paresis and tabes dorsalis are especially well known; new growths in the brain or cord, apoplexy before the age of 50 and especially before 40 years of age, and cerebral softening due to endarteritis obliterans are also frequently caused by living and active spirochetes.

Cardiovascular lesions are not infrequently due to syphilis. It has been variously estimated that from 66 to 84 per cent. of persons with aneurysms have syphilis, and these figures are probably low in view of the results observed with the Wassermann reaction. Sclerotic endocarditis involving particularly the aortic valves, diffuse myocarditis, circumscribed gummas in the heart, and chronic arteritis or sclerosis especially involving the coronary arteries are among the more important lesions of this system which may or may not be detected clinically.

Lesions in the liver and kidneys, the latter more prone to develop in the first year after infection, and showing albuminuria with no other demonstrable signs and disappearing under treatment, may be due to infection with syphilis. It is well recognized that syphilis plays an important rôle in tuberculosis by way of lowering bodily vitality and resistance and thereby preparing the way for successful infection by the tubercle bacillus, so that Fournier and others recognized syphilis, especially in young subjects, as an etiologic fact in tuberculosis. Likewise leukokeratosis or leukoplakia in a man or woman who does not smoke strongly suggests unrecognized syphilitic infection probably of extragenital origin; and carcinoma of the tongue, especially among syphilitic smokers, may have its origin in these lesions.

So far as the question of life insurance is concerned, particularly from the standpoint of duration of life and from the fact that the syphilitic person is more liable to develop certain diseases than the nonsyphilitic person, it would appear necessary to establish as definitely as possible the absence of syphilis among certain applicants for insurance, especially those applying late in life and for heavy policies. It is clear that the diagnosis of syphilis in the primary, secondary and in some cases in the tertiary stages, especially cases of tabes dorsalis and paresis, may present to the physician no difficulties in diagnosis; but not an inconsiderable number of applicants may have contracted syphilis at an earlier date, and apply for insurance at a time when the disease is latent and defies the most expert clinician in its detection. Or an applicant may admit infection, but claim that adequate treatment has been received. It is in these groups of cases that diagnostic tests, and especially the Wassermann and luetin tests, are likely to prove of most value. In the presence of lesions more or less definite and diagnostic clinically, these tests may have nothing more than a confirmatory value; but in latent or occult syphilis and as a guide to treatment, both, and especially the Wassermann reaction, have a particular value. Each company must decide for itself the importance of knowing whether a certain applicant for insurance is or is not syphilitic, or if so, whether treatment has been adequate; in answering these questions, particularly in the case of occult and tertiary syphilis, the Wassermann and luetin reactions, particularly the former, have proved of great value when properly conducted.

WASSERMANN REACTION

The highly specific nature of the syphilis reaction has been proved by extensive investigations with the serums of normal persons and of persons afflicted with diseases other than syphilis. Unfortunately, the reac-

tion is beset by so many technical errors that a review of the literature, especially of the early literature, shows results that are quite confusing and contradictory. Following the original communication of Wassermann and Detre, and especially after it was shown that the antigen need not be biologically specific, the subject was extensively investigated by various observers, who reported securing positive reactions in many different diseases, results that we now know must have been due largely to technical errors. At present it is known that positive Wassermann reactions may occur in frambesia and leprosy or in a few cases after anesthesia, but not in scarlet fever, malaria and the host of other infections as reported from time to time and especially by earlier investigators. In diseases like leprosy and frambesia, the symptoms are of such a character as may readily be differentiated from syphilis, and accordingly the Wassermann reaction when properly performed is of unequaled and incalculable diagnostic value.

The question is often asked, Can a diagnosis of syphilis be made by the Wassermann reaction? In the group of cases to which I am especially referring in relation to insurance, namely, those in the latent and occult stages, I unhesitatingly reply that it may, and indeed it may be that the diagnosis cannot be made otherwise, except by the luetin reaction. When properly performed, I regard an unmistakably positive reaction as a sign of syphilis. A positive reaction is of more value than a negative one, because the reaction is not yet sufficiently delicate despite certain refinements in technic. In this connection I would refer to the results of Warthin's investigations, who found the *Spirochaeta pallida* in the cardiovascular tissues of apparently "cured" and Wassermann negative persons.

Unfortunately the technic of the Wassermann reaction is subject to so many errors that uniform results from different laboratories cannot be expected. When it is remembered that traces of acid or alkali on the glassware may alter a true reaction, not to mention variations in the properties of the antigen and other biologic reagents of this test, it is to be emphasized that the Wassermann test should be entrusted only to those who are especially qualified by prolonged training and experience to prepare and standardize the reagents and conduct the tests.

Of great importance in conducting the Wassermann reaction is the question of the antigen employed. In my opinion the properties, standardization and dose employed of this reagent has more influence on the variable results obtained from different laboratories than the technic itself; it cannot be otherwise, and constitutes a strong plea for the adoption of standard reagents and ultimately of a standard technic. Certainly an alcoholic extract of syphilitic liver is not a specific antigen in the true meaning of that term; such extracts may be far inferior to extracts of normal tissue, as the specificity and great value of the Wassermann reaction does not depend on a specific antigen, but on the peculiar nature of the antibody concerned, which possesses in a highly specific manner the property of absorbing or fixing complement in the presence of lipoids. I believe that the most sensitive antigen is that of Sachs, namely, an alcoholic extract of heart reenforced with cholesterin. I have used such extracts for several years, and compared them with other extracts in thousands of tests; and while they must be used with particular care, owing to the antilytic properties of cholesterin to avoid false reactions, a satisfactory cholesterinized extract has proved most sensitive, uniform and generally satisfactory. I am convinced that the antibody in the serums of different syphilitic persons shows variable affinities for different lipoids in the antigenic extracts; that is, the serum of one person may cause well marked complement fixation with one extract and not with another, and both extracts be of known antigenic value. This observation can be made only when two or more antigens are used as a routine in conducting the Wassermann reaction, and for this reason I have long advocated the employment of two or more extracts in conducting the Wassermann test instead of relying on one extract.

It is probable that in tertiary and latent syphilis the Wassermann reaction has its greatest value in relation to life insurance. As previously stated, syphilis is so diverse in character, and may be responsible for so many diverse clinical conditions, that the reaction has become well-nigh indispensable as a diagnostic aid. There is no limit to the time following infection in which positive reactions may not be found.

In cases of untreated and active tertiary syphilis, the reaction is positive in about 96 per cent. of cases, especially in paresis, tabes dorsalis, aortic aneurysm, aortic insufficiency, etc.

In cases of latent syphilis and especially in those of long standing without treatment or with indifferent treatment, the Wassermann test is positive in about 75 to 80 per cent., and may constitute the only evidence of the existence of the disease at a time when the prompt institution of treatment may prevent the development of tertiary lesions, which are so likely to follow. In the presence of a negative reaction with the serum of an applicant presenting clinical evidences suggestive of syphilis, the cerebrospinal fluid should be tested before a final opinion is expressed.

Congenital syphilis rarely comes into consideration in life insurance, but if recognized in a young applicant, insurance is usually denied; in adults, signs of the disease under otherwise favorable circumstances need not necessarily debar the applicant. In untreated congenital syphilis of children, 1 year or over in age, the Wassermann reaction is positive in from 97 to 100 per cent. of cases, and in congenital mental deficiency the reaction has shown that syphilis plays a larger part in the etiology of this condition than is generally supposed.

The Wassermann reaction has proved quite valuable as an index to the thoroughness of treatment either by mercury or salvarsan or both. The reaction is the most constant and delicate single symptom of syphilis and usually the last to disappear; when the question of insurance depends on the question of treatment, it cannot be settled by adopting an arbitrary treatment over an arbitrary length of time, but rather in conjunction with the Wassermann reaction and clinical examination of the patient. The question of duration of treatment and cure depends on the infection and lapse of time between infection and the institution of treatment. In the light of our present knowledge, a persistently positive reaction over a long period of time must be accepted as an indication of living spirochetes which have escaped destruction. The significance of the persistently positive reaction in the presence of vigorous and prolonged treatment, however, is

not clear and requires further clinical observation and research; but the consensus of opinion at present is to the effect that such persons harbor living spirochetes, and that lesions of the central nervous system are especially likely to develop.

LUETIN REACTION

The luetin reaction of Noguchi is specific for syphilis, and constitutes an allergic reaction similar to the tuberculin reaction in tuberculosis.

The test is quite simple, and consists in the *intracutaneous* injection of 0.07 or 0.1 c.c. of luetin, which is a heat killed and sterile emulsion of different cultures of *Spirochaeta pallida*. A positive reaction is indicated by the development of a papule or pustule with erythema at the site of inoculation.

In a recent review of the literature on this reaction, Noguchi has reported positive reactions in about 80 per cent. of cases of tertiary syphilis; 70 per cent. of cases of congenital syphilis; 60 per cent. of cases of syphilis of the nervous system, such as general paralysis and tabes dorsalis, and in nearly 90 per cent. of cases of visceral syphilis, especially in cases of aortic insufficiency.

The luetin reaction is of most value in tertiary, congenital and latent syphilis and especially in those under treatment which are the group of cases of most interest in connection with the question of life insurance. The test is of little value in primary and secondary syphilis.

The Wassermann and luetin reactions do not run parallel, and in my experience the chief value of the test is in the diagnosis of those occasional cases of latent, tertiary or congenital syphilis that fail to react positively with the Wassermann reaction. I am quite convinced that in the majority of cases a negative Wassermann reaction, carefully and skilfully performed, and especially with an antigen reenforced with cholesterin, is stronger evidence of the *absence* of syphilis than is a negative luetin test. On the other hand, a definitely positive luetin reaction may be regarded as indicating that the patient is or has been syphilitic, even though the Wassermann test is negative.

The luetin test is therefore quite simple, and when properly applied should find a special field of usefulness in insurance practice; I do not think that it should replace the Wassermann test if the latter is conducted by a competent person, but it is less open to error, though less valuable as a diagnostic test, and finds its greatest usefulness as a check on the Wassermann reaction.

IN CONCLUSION

1. A syphilitic applicant is not as good a risk for life insurance as a nonsyphilitic person, and never constitutes a first-class risk.

2. Persons acquiring syphilis after 45 years of age, and syphilis among alcoholics and free livers and those showing early involvement of the nervous system are especially bad risks.

3. No syphilitic applicant should be accepted who has not undergone proper and thorough treatment, nor any who show active signs and symptoms of the disease in any of its stages.

4. It is clear that the statements of an applicant cannot always be accepted in either a positive or more particularly a negative way, in answering the questions concerning infection with syphilis. He may believe that he has contracted syphilis at an earlier date and be mistaken; more likely, however, he is ignorant of having contracted syphilis, or wilfully denies knowledge of infection or believes he is cured. It is frequently impossible, on the basis of questions and answers and physical examination alone, for the medical examiner to state positively that an applicant is or is not syphilitic, or if so, that he is cured. In applicants presenting frank primary lesion or its scar, or secondary lesions or well marked tertiary lesions, the diagnosis may readily enough be made; but an applicant in the latent and occult stages appearing in good bodily health and denying infection may readily enough pass as a first-class risk.

In the detection of these cases, the Wassermann and luetin reactions will prove of great value; likewise in deciding the question of acceptance and risk in the case of a syphilitic applicant who has undergone treatment.

Each company must decide for itself the value of such knowledge in risks and ratings; in my opinion an unquestionably positive Wassermann reaction in competent hands may be accepted as a sign of syphilis; a positive luetin reaction may be accepted an an indication that the applicant is or has been syphilitic. With the question of the presence, absence or cure of syphilis settled in this manner, in conjunction with a thorough physical examination, the company should be guided in acceptance, risks and rates by at least the same rules as govern such cases when the diagnosis is made on the basis of an applicant's statements or the results of the physician's physical examination.

ENDOCRINOPATHIC INHERITANCE*

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In 1850 a moderate giant, 6 feet 2 inches in height, married a woman of diabetic tendencies who later developed true diabetes, from which she died. This marriage gave rise to a family of three apparently normal daughters, of whom one still lives, one died at the age of 62 of carcinoma, and the third died of pneumonia following the puerperium. None of the three showed during her life any tendency, so far as we can now recognize such tendency, toward internal glandular disturbance. All three of them married. The oldest, No. 3 in Figure 1, had a family consisting of six individuals, of whom one, No. 9, had exophthalmic goiter, No. 11 harelip, No. 12 chalky degeneration of the teeth with a tendency to diabetes, and No. 14, who was born blind and puny, developed a sarcoma of the face, and died in his first year of life. No. 12 married and had two children, of whom one is distinctly hyperpituitary in character, while the other one is normal. No. 11, who had a congenital harelip, begat a family of three children, of whom the first born, No. 18, has osteomalacia resulting in a deformity of dwarflike character, while the other two are seemingly normal. No. 13 married, and has a family of two apparently normal children, one of whom, No. 23, is beginning to show an exophthalmos.

* Read before the staff of the Third Division, Neurological Institute, New York, Dec. 7, 1915.

Let us return to the first generation and examine the progeny of the second older daughter, No. 4, of the original parents. Her marriage resulted in a family of three children, the oldest of whom, No. 15, is a moderate giant, 6 feet 1 inch in height; a second, No. 16, is a giant, 6 feet 3 inches in height with a tendency to acromegaly, and the third, No. 17, a fairly normal girl. The third child of the original parents, No. 5, had two children, seemingly normal, who died in their early youth of diphtheria.

In tracing the progeny of the original parents of this family through three generations, we find certain characteristics transmitted, which in the light of present knowledge we may assume to be due to disturbed function of the endocrine glands. It may be interesting to attempt an explanation of this transmission based on the mendelian laws of heredity. Of course a great deal must be assumed in such an attempt which cannot be submittted to proof. Such an attempt must also necessarily deal with the simplest factors to which we can possibly reduce—if such reduction is at all possible—the complicated interrelations of the internal glandular system. Such a reduction, I believe, might be best expressed in terms of two factors, both of which are end-results of disharmony among the endocrine glands. One of these factors relates to the normal control of growth, and the other to the normal control of metabolism in the organism. An absence of such a normal coefficient of growth we may assume to result in various structural abnormalities of the individual, on the side either of overgrowth or undergrowth, or even vicious growth. Absence of a normal metabolic factor might be said to result in disarrangements of the secretions and excretions producing underweight or overweight, and increased or diminished oxidation of the tissues, with the incidental hyperglycemia or hypoglycemia. It is admittedly difficult to demarcate sharply the field where growth and metabolism merge into one another, and for our present insufficient and fragmentary knowledge, only the gross clinical evidences of either type are possible of recognition; and these are the only ones on which the following is based.

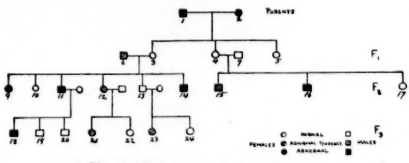

Fig. 1.—Endocrinopathic heredity chart.

Let us denote the factor controlling normal growth by G, and that controlling metabolism by M. A normal being might then be said to have a constitution containing both factors in equal degree, that is, a homozygote, represented by GGMM.

At this point it might be well to explain the terminology used in discussing the mendelian laws, and some basic assumptions underlying the theory.[1] It is assumed that both the male and female sexual cells transmit so-called unit characters to the offspring produced by their union. Each sexual cell of either type is known as a gamete, while the union of a male and female cell is known as a zygote. This zygote, therefore, embraces the unit characters of the two gametes fused together, as it were. When this zygote in its turn produces gametes, this combination is broken up, and the reverse process of disintegration of the combination of unit characters takes place. The properties of zygotes are often appreciable to observation; color and shape, for instance, are zygotic properties. But with the gametes no such observation gives any clue. For who can tell, by inspection of the egg, whether the resulting bird will be black or white? Again, a unit character is either absent in the gamete or it is present. In each case, the absence is quite as important as the presence, and must be indicated. The unit character is transmitted as such in the gamete unmodified in degree or intensity. Each gamete in respect to a unit character must be represented as containing it or lacking it. An individual is said to be homozygous for a given character when it has been formed by two gametes both containing the character; and heterozygous, when of the gametes forming it, one contains the character while the other lacks it. All the gametes of a homozygote have the particular character, while only half the gametes produced by heterozygotes contain it.

The constitution of the male original parent, No. 1, would then be gM, and that of the original female parent Gm, the small letter indicating the absence in the gamete of the unit character designated by the corresponding capital letter. In other words, the male original parent could transmit through the male gamete a normal metabolic characteristic, but not a normal growth factor; whereas the female would transmit through a female gamete a normal growth factor but an absence of a normal metabolic factor. The zygote formed from the combination of these two gametes would then be GgMm. This zygote would represent the constitution of the first family (F_1). We see in this zygote constitution both factors of normal growth and metabolism (G and M) present, and these being present in each member of the family F_1, all of this family must be apparently normal. This would account for the three apparently normal sisters in F_1. And yet it is to be remembered that each of these sisters is heterozygous to G and M.

Now let us take up the marriage of the eldest of these sisters. Her husband, No. 6, was rather tall, a little over 6 feet, and he also gave further evidence of an unstable endocrine system in that his body hair growth was almost absent, and the adiposities characteristic of the other sex were partly in evidence. His zygotic constitution might, therefore, properly be assumed to be GgMm, namely, also heterozygous to both factors. In this constitution he therefore resembled the family into which he married, although its members gave no outward sign of endocrine disturbance. Now the series of female gametes of F_1 in all possible combinations of the unit factors is as follows: gM, GM, Gm, gm.; while the male gametes of individual No. 6 may also be represented by GM, gM, Gm, gm. In order to determine all the possible kinds of zygotes formed by the possible combinations of these two series of gametes, these various gametes are arranged in a series of squares, according to fixed order. Such a square is represented in Figure 2. It will be easily seen that all possible combinations are represented.

From a study of this chart we find that of the sixteen possible combinations, nine contain both of the interacting factors G and M. Those, therefore, would

1. For a more complete discussion, the following may be consulted:
Bateson, W.: Mendel's Principles of Heredity, Cambridge, 1909.
Mendel, G. J.: Versuche über Pflanzenhybriden, Verhandl. d. Naturforschervereins, Brünn, 1865.
Weismann, August: Die Kontinuität des Keimplasmas als Grundlage einer Theorie der Vererbung, Jena, 1892.
Punnett: Mendelism, Ed. 3, New York, The Macmillan Company, 1911.

be apparently normal individuals, whereas seven would contain only one of the interacting factors, or none of them. These seven would be patently abnormal individuals. The latter seven can be subdivided into three zygotes without a metabolic factor (M), three without the growth factor (G), and one lacking both factors, and our ratios then become 9:3:3:1. This is the exact ratio obtaining in the mendelian law for the transmission of characteristics depending on two interacting factors. Of the nine seemingly normal cases, however, only one, GGMM, is homozygous to both interacting factors, and is therefore the only individual of the family who would not transmit any endocrine anomalies, and who would breed true.

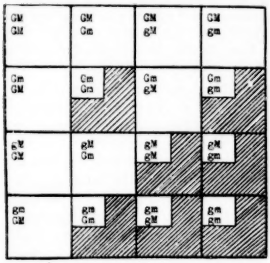

Fig. 2.—This represents all possible combinations of the gametes of the individuals of F_1 with those of individual No. 6. The clear squares give apparently normal zygotes, for they all contain both G and M, although some are heterozygous to either character. The shaded squares represent abnormal zygotes, for none contains both G and M. The ratio of normal to abnormal individuals is seen to be 9:7, although the 7 can be again subdivided, as seen in the text, into 3.3.1, making the final ratios 9:3:3:1, the mendelian ratio.

Let us see how these theoretical results compare with the actual F_2 family of the oldest daughter. The F_2 family of the oldest daughter, No. 3, had six members, two of whom, Nos. 9 and 11, had exophthalmic goiter and harelip, respectively; while three members of the family, Nos. 10, 12 and 13, are apparently normal. The chart shows that there ought to be as many abnormal individuals with metabolic changes as there are with growth abnormalities. Nos. 9 and 11 satisfy this condition. It also shows that among the so-called normal individuals of the family there would be some that are heterozygous to either one of the factors. Such an individual is present in No. 12, who showed extremely chalky teeth with an abnormal leaning to sweets in her diet. She probably was represented by the zygote GGMm. One other square of the table is extremely interesting, that is, the one representing the zygote ggmm. This would represent an individual with abnormality of growth and metabolism both. No. 14 of F_2 seemingly answers this condition; he was born blind and puny, and developed sarcoma of the face, dying in his first year. The entire family F_2 therefore had three normal and three abnormal individuals, closely corresponding to the theoretical ratio.

Individual 11 of F_2 married an apparently normal female. His progeny, representing the F_3 family, has three members, one of whom evidently inherited the father's lack of growth factor, for he has osteomalacia and was dwarfed and backward (No. 18). No. 12 of F_2 married a normal man, and yet the absence of one of the metabolic factors in her constitution (which might be represented GGMm) seems to have been transmitted to one of their two children in F_3, namely, No. 21, a seemingly normal child but with pronounced hyperpituitary characteristics. No. 13 of F_2 married a normal woman, and of th ir two children, the older one, No. 23, is beginning to develop an exophthalmos.

Returning now to the second daughter, No. 4 of F_1, we find that she married a man apparently normal, but over 6 feet in height; representing his zygotic constitution therefore as GgMM, and his wife's constitution as we have seen, GgMm, we have as the male gametes of this union gM and GM, while the female gametes are gM, GM, gm, Gm. The various combinations of these gametes are represented again by means of a comprehensive square (Fig. 3).

In this square, the ratio of normal to abnormal zygotes is 12:4 or 3:1, the mendelian ratio of inheritance in which the parents differed in only one characteristic, in this case the character being that of normal metabolism, M. The resulting abnormal zygotes have all at least one M factor, but all of them lack the G factor of normal growth. As a matter of fact, there were three members of this family (F_2), one of whom was abnormal as to growth, giving a ratio of 2:1, the theoretical ratio being, as we have seen, 3:1. One of these, No. 16, was a giant, 6 feet 3 inches in height with acromegalic tendency, while the other, No. 15, was a moderate giant 6 feet 1 inch high. We therefore see that by considering height of stature as only part of a unit character, the real unit character being a general growth-controlling one, we arrive at a fairly close correspondence to the mendelian laws of inheritance.

That this growth-controlling factor is subject to various modifiers and coefficients, producing in one individual, through absence, a giant stature, in another dwarf stature, and in a third actual lapses in bony continuity, may be reasonably assumed. The actual unit character of growth in Mendel's giant peas was not really, as he first assumed, growth in height, but internodal growth. It simply happened that excessive internodal growth corresponded to increased tallness in his plants. Increased internodal growth might just as well have produced tortuous stems of no greater height than the dwarf peas. Therefore we have a reason for the nonconformity of transmission of giantism to mendelian laws as heretofore investigated, giantism being simply only one form of abnormal growth, and not the unit character in itself.

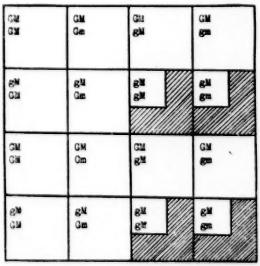

Fig. 3.—Represents the combinations of the gametes of Individuals 4 and 7 in F_1. The clear squares show the normal individuals of such a union, some being homozygous to both G and M, and others heterozygous. The shaded squares are all abnormals. The abnormals here all lack the G factor, and, as seen by the actual offspring, this was actually borne out, two of the three children having giant tendencies. The ratio here is 12:4 or 3:1, the mendelian ratio when the parents differ only in one characteristic.

The importance of investigating such inheritance as is attempted in this paper is that it may enable us to forecast, within some limits of probability, the characteristics of the offspring of certain marriages, and to advise the prospective parents of such probability. It forces on us the necessity of closer study and investigation into the nature and treatment of the endocrine disturbances. An interesting observation also in this series is that all the abnormal growth

zygotes were male, while all the abnormal metabolic ones were female. It would seem that abnormal growth is dominant in the male and recessive in the female; while abnormal metabolism may be dominant in the female and recessive in the male. But, of course, the observations are far too few to draw such general conclusions, and many more families and individuals will have to be studied to obtain sufficient data of value.

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INDUSTRIAL ANILIN POISONING IN THE UNITED STATES

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Industrial poisoning from anilin and substances closely allied to it has long been recognized in Germany, where the manufacture of anilin dyes is an enormously important industry, and the possible effects on the workmen of the various substances used or evolved during such manufacture has there been a subject of study since the sixties. More recently the growth of the dye industry in Great Britain has led to reports in that country concerning cases of anilin and of nitrobenzene poisoning.[1] As we know, there was no attempt in this country to compete with Germany in the manufacture of anilin colors or of anilin itself till the war shut off the supply and forced us to begin to make for ourselves what had heretofore been obtained from Germany. Uncertainty as to the duration of the war and lack of skill in these complicated processes delayed for many months the equipment of American factories, but once started, the movement has gained great impetus, and it is said that there are already more than a dozen factories for the production of anilin from benzene and of anilin dyes, and undoubtedly more will be constructed during the present year.

The sudden introduction of these industries brings new problems before physicians and sanitarians. Making anilin from coal tar involves exposure to poisons that are new to us in America, and because they are unfamiliar it is most improbable that the planners of these factories and the industrial chemists in charge of the processes will have given much thought to the protection of their workmen against the dangers inherent in the industry. If the experience of one town is typical, the greater number of American practitioners are not prepared to recognize the symptoms of poisoning from these bodies, or to estimate their seriousness. After the introduction, a couple of years ago, of anilin as a compound of rubber in the tire factories of Akron, Ohio, it was some time before the physicians of that city realized what was the cause of the peculiar illness that had appeared among rubber workers; many patients were treated for chronic cardiac disease, and others for epilepsy. Therefore it becomes a very important matter in the interests of public health that the medical profession should know the nature of these substances, their mode of entrance into the body, and the means which must be adopted to protect those exposed in the course of their work.

1. The earliest report quoted by Kobert (Die Intoxikationen, Stuttgart, 1906) is English: Letheby: Proc. Roy. Soc., 1863.

POISONS USED IN THE MANUFACTURE OF ANILIN AND ANILIN DYES

A short summary of the processes used in making anilin colors will show that the workmen employed in this industry are exposed to highly poisonous volatile compounds. The process starts with coal tar, which is a mixture of benzene (C_6H_6), toluene, xylene, etc., all of them volatile poisons responsible for a fairly large number of fatal industrial cases in the literature.[2] The benzene is treated with nitric and sulphuric acids to form nitrobenzene ($C_6H_5NO_2$), a poison which, according to Lewin,[3] has a mortality of 39.3 per cent., and according to von Jaksch[4], of 20 per cent. Then the nitrobenzene is reduced by means of iron filings and hydrochloric acid to anilin ($C_6H_5NH_2$). The most important colors are made by the action of nitrous acid on anilin and the allied aromatic amins. There is opportunity, therefore, for poisoning from benzene, nitrobenzene and anilin, to say nothing of the multitude of similar bodies used or produced in the various processes, such as the nitrophenols, the nitrochlorbenzenes and the naphthylamins. Methyl alcohol is one of the reagents used.

Grandhomme,[5] who was for many years attached to the great dye works at Höchst, reported 128 cases of industrial poisoning there, 109 of which were caused by anilin. Leymann,[5] who does not name the factory with which he was connected, gives a record of 171 cases of anilin and toluidin poisoning, and 101 from nitrobenzene and its allied bodies. German rubber works also have had their share of anilin poisoning. The factory inspectors' report for 1908 tells of the occurrence of wholesale poisoning in the extraction of rubber from crude gum. In this instance the workmen, seventeen in all, were working in twelve hour shifts in an atmosphere contaminated with anilin fumes. Eleven were poisoned, two being rendered unconscious and requiring hospital care. The following year two instances are reported of anilin poisoning in the recovery of rubber from scrap. Four acute cases developed in one factory, and on examination fifteen other men were found to be suffering from chronic poisoning. In the second place, where twenty-five men were employed, no less than fourteen were overcome by the fumes, and ten of them were ill for more than ten days.

ANILIN IN INDUSTRY IN THE UNITED STATES

Aside from the production of anilin colors, the oil is used in this country in the compounding of rubber, especially for tires, and in reclaiming rubber from scrap, for which purposes it has come into increasing demand during the last few years. When the war suddenly shut off the supply from Germany, some rubber manufacturers gave up using it, but others set themselves to provide it by home manufacture, so that now we must add to the men exposed to anilism in rubber manufacture those who are engaged in producing the anilin. Industrial anilin poisoning, which a few years ago was negligible in this country, has suddenly assumed decided importance. So far the making of dyes is too new to have furnished any reported cases; those which are on record come from the rubber industry and from the use of a wash for printers' ink which has anilin as one of its ingredients.

2. Rambousek: Gewerbliche Vergiftungen, Leipzig, 1911, p. 142.
3. Lewin: Virchows Arch. f. path. Anat., 1879, lxxvi, 443.
4. Von Jaksch: Die Vergiftungen, Vienna, 1912, p. 325.
5. In Rambousek (Footnote 2).

It is impossible to say how much of this substance is used in the United States or even to say how many plants use it, for the making of rubber, and even more the reclaiming of rubber, is an industry fairly hedged about with trade secrets. That is why it was so difficult for Akron physicians to trace this kind of poisoning to its source. It is, however, well known in Akron now, and common enough for the victims to be familiarly known as "blue boys," from the cyanosis which is so prominent a symptom. Since the discovery of the cause of the trouble, the rubber manufacturers have taken measures for the protection of their men, either by installing exhaust ventilators, or simply by warning them to seek the open air as soon as flushing of the face and violent headache come on. It is said that there is now far less serious poisoning in Akron rubber works.

THE TOXICITY OF ANILIN

Pure anilin has never been known to cause poisoning; but pure anilin is not used in industry. What we know under this name is a mixture of anilin (amidobenzene) with metatoluidin, paratoluidin and orthotoluidin and xylidin in varying proportions. Every medical student is familiar with the anilin oil which he uses as a clearing fluid for stained specimens, that golden brown oil with its pleasant nutlike odor. Unlike most volatile poisons, it gives no warning of its character, for it does not irritate the eyes and throat, and is apparently as harmless as cedar oil. Yet according to the researches of K. B. Lehmann,[6] anilin is toxic in even smaller doses than are benzene, chloroform or carbon disulphid. Toxic symptoms follow the inhaling of from 0.1 to 0.25 gm. of anilin, while it takes from 1 to 1.1 gm. of carbon disulphid to produce symptoms of poisoning. Anilin volatilizes at room temperature; the boiling point is high, 182 C.

Krause[7] has reported two instances of poisoning from insignificant quantities of anilin. The men were working in the Zeiss Optical Works in Jena, testing the clarity of rock crystals by dipping them in small receptacles containing anilin, and then holding them up to the light. One man worked alone in a small room, and he felt the effects at the end of his second two hour shift, complaining of nervousness and exhibiting a marked cyanosis of the skin and mucous membranes. The second was in a larger room in which the fumes were more diluted, and he worked almost four hours before becoming cyanosed. The blue color increased in intensity after a second day's work.

Still more striking in this connection is a non-industrial case related by Trespe, of a little boy who breathed what must have been a very slight quantity of fume and developed marked symptoms. He slept in the same bed with an older brother who just before going to bed had rubbed some anilin on his frost bitten fingers, with the result that he himself was severely poisoned and the little fellow moderately poisoned.

SYMPTOMS OF ANILIN POISONING

These are common to the whole group, including nitrobenzene and its derivatives, though there are minor variations which serve to distinguish anilin poisoning in a typical case. The first symptom noted is weariness, or sleepiness, flushing of the face, a sense of fulness in the head and even of slight mental confusion, dryness of the throat and difficulty in swallowing. The color of the face changes from red to livid blue, which may increase to a deep purple. The pulse is rapid and weak, the temperature subnormal. Headache comes on early and is often violent, accompanied by dizziness and nausea, and in the more serious cases there is decided dyspnea, increasing mental confusion, and finally loss of consciousness. Sometimes this occurs suddenly, sometimes not till some hours after the man has left the poisoned atmosphere. The urine at first is usually normal; later it becomes smoky in appearance.

In some cases the subjective symptoms are slight and the man seeks advice because of his livid or blue color, which is alarming to his family. This was true of two cases reported by G. Apfelbach and described farther on. Usually industrial cases do not exhibit the severest symptoms, but we have records of instances of epileptoid convulsions and of protracted coma which sometimes have proved very puzzling to the attending physician. One of these is interesting, illustrating as it does the vasomotor depression which is a feature of this poison.

> The patient, who was chief chemist in one of the large rubber companies, was found by his physician suffering from violent headache and nausea. He was profoundly cyanotic. Soon after the physician arrived, a convulsion, epileptoid in character came on—the man never had a convulsion before this—and after it he was greatly prostrated. The physician, not knowing that it was a case of anilin poisoning, administered inhalations of amyl nitrite which very much aggravated the symptoms, and for a while after that the patient's condition was most precarious.

Recovery in the milder cases is prompt, the men returning to work on the following day as a usual thing, though the cyanosis often persists for several days more. Severer cases may incapacitate for work during several weeks. Some men are said to establish a tolerance to the poison, and do not suffer a second attack; but it is more usual to find an increased susceptibility following an acute poisoning. Thus in one of the Akron plants in which anilin is being manufactured, a foreign workman, who incidentally is said to have been a heavy drinker, was told to fill a drum with anilin, and while doing this he lost consciousness and had to be taken home. The next day he came back to work, but as soon as he entered the room where the oil was being poured into drums, he again fainted away.

Chronic anilism is described by von Jaksch as a condition resulting from repeated doses of the poison so small as not to set up symptoms of acute poisoning. There are more or less headache, nausea, vertigo, muscular twitchings, disturbances of vision, sense of exhaustion and loss of strength. The skin is usually livid, or it may be jaundiced. In one instance of chronic poisoning which was reported to us in Akron, the man had been treated for chronic heart disease because of his cyanotic appearance and his dyspnea on exertion. He was found to be profoundly anemic, but there was no heart lesion, and he recovered after changing to outdoor work.

We have as yet no record in this country of the occurrence of tumors of the bladder in anilin workers, such as has been described by German observers. These tumors are adenomatous or carcinomatous and are supposedly caused by the irritation of some of the products of anilin decomposition excreted by the kidneys.

6. Lehmann, K. B., quoted in Kobert: Lehrbuch der Intoxikationen, Stuttgart, ii, 1109.
7. Krause: Med. Klin., 1908, iv, 10.

MODE OF ENTRANCE OF ANILIN

The poison may enter the skin or the lungs, more often by both ways. Birge's[8] cases are instances of pure skin absorption.

Two painters were using anilin-black paint, applying it with a brush and then washing the surface with hot water and soap suds. There were no fumes, but both men were seized with nausea, general weakness, palpitation of the heart, then violent headache with vomiting in one case and diarrhea in the other. Both passed dark colored urine. The skin was very pale, the lips blue. The next day they were able to go back to work, and by wearing rubber gloves they avoided a repetition of the trouble.

On the other hand, von Jaksch[4] reports a case of pure respiratory origin.

A boy of 17 years had been set to work for the first time mixing anilin with other compounds in an open receptacle. Headache came on almost at once, and after four hours' work he was forced to seek the outer air. He went home, and a physician, summoned some hours later, found him in coma, deeply cyanosed, with a weak, rapid pulse and dyspnea. Edema of the lungs developed and did not clear up for four or five days. The coma lasted several hours. In this case anilin could be detected in the urine.

The greater number of industrial cases follow the spilling or splashing of anilin over clothes or skin, and doubtless both skin absorption and lung absorption play their part.

PATHOLOGY OF ANILIN POISONING

Rambousek[2] places anilin and all the nitro and amido derivatives of the aromatic series among the true blood poisons, the principle action of which is to cause the formation of methemoglobin. He attributes all the resulting symptoms to the fact that in place of oxyhemoglobin with its easily released oxygen, there is methemoglobin with its firmly bound oxygen, and consequently a condition of "internal suffocation" from lack of oxygen in the tissues. The headache, feeling of anxiety, oppression, weakness, dizziness, dyspnea and finally loss of consciousness are all caused by the deprivation of oxygen. The later symptoms, icterus, methemoglobinuria, bladder irritation and bronchitis, are caused by the elimination of the poison. Kobert[1] lays almost equal stress on the importance of the blood changes; but, unlike Rambousek, he believes that there is also a direct effect on the central nervous system. Curschmann[9] agrees with the latter that anilin and the anilin group are pure blood poisons, and that all the symptoms are referable to blood changes.

Experimental studies of these blood changes were made by Price-Jones and Boycott,[10] using anilin hydrochlorid on rabbits. This compound, which is used in rubber manufacture under the name of "anilin salt," is essentially anilin dissolved in hydrochloric acid. These authors succeeded in producing severe poisoning, the hemoglobin falling to 50 per cent. The blood was turbid and brownish, and the spectroscope showed a band almost, but not quite, corresponding to that of methemoglobin. There was a transient leukocytosis, from 30,000 to 40,000, and both the circulating blood and the bone marrow showed evidence of efforts at regeneration of the red corpuscles in the form of megaloblasts, nucleated reds, and basophilic granules. The destruction of cellular elements in the blood was sometimes accompanied by an increase in the total volume.

Malden[11] examined the blood of thirteen men employed in an English factory where anilin dyes and nitrobenzene were made. Six of the thirteen had a high red count with a low color index and many imperfectly developed reds. The spectrum of methemoglobin could be detected only when it was present in the proportion of one part to ten of oxyhemoglobin. Loss of hemoglobin ran from 5 to 50 per cent. Stained specimens showed great variations in the size of the red corpuscles, from 5 to 11 microns, the large predominating, but there were no nucleated reds. It is noteworthy that basophilic granules were found in six of the thirteen men, and Malden believes that this is often the earliest sign of anilin poisoning, as it is of lead poisoning. In pronounced cases there may be ten or twelve stippled cells in every field. A differential count of whites in nine cases showed a diminution of polymorphonuclears — marked in five — with a corresponding increase in small mononuclears. Eosinophils were increased in three, mast cells in six.

Malden summarizes the effect on the blood of small repeated doses of anilin thus: reds increased in number with loss of hemoglobin; low color index; degeneration and imperfect regeneration of red corpuscles; decrease in polymorphous leukocytes, increase in lymphocytes.

DIAGNOSIS OF ANILIN POISONING

The importance of the blood examination in the diagnosis is very evident. Curschmann advises in all doubtful chronic cases an estimation of the hemoglobin, and if this has fallen 15 or 20 per cent., the man should be kept under observation, for anemia is the earliest symptom. As we have seen, Malden would look for stippled cells first. When toxic symptoms have developed, the presence of hemoglobin in the urine should be looked for. The physician who is not equipped with an apparatus for making blood examinations will depend on the cyanosis, the dark colored urine, the odor of anilin in the breath, the rapid pulse of low tension, the dyspnea, and the nervous symptoms, together with the history of employment in a factory in which this group of compounds is handled.

CASES OF INDUSTRIAL ANILIN POISONING IN THE UNITED STATES

The first cases of this sort in the literature that we have been able to discover were reported in 1913 by G. L. Apfelbach:[12]

Two men were referred by factory inspectors to Dr. Apfelbach on account of the marked cyanosis of skin and mucous membranes. The first was a press-feeder in a printing establishment who had been using a new sort of roller wash to remove the ink from the press rollers. It was a black oily fluid, which on analysis in the state laboratory was found to contain anilin. On the day when he was seen by the inspector, he had cleaned more rollers than usual, but he had been cyanosed before, though never so profoundly. The symptoms elicited by questioning were headache, mostly occipital, dizziness, pain in the epigastrium, dryness in the throat, and slight difficulty in swallowing, but none of these was severe enough to make him seek medical aid. It was the blue color which alarmed him. His pulse was of high tension, his blood pressure 170 mm. Hg (the man was 47 years old), but no other abnormality was observed with the exception of the pro-

8. Birge, E. G.: A Probable Case of Anilin Poisoning, THE JOURNAL A. M. A., Jan. 24, 1914, p. 314.
9. Curschmann: Tr. Internat. Cong. Indust. Hyg., Brussels, 1910.
10. Price-Jones and Boycott: Guy's Hosp. Rep., 1901, lxiii, 309.
11. Malden: Jour. Hyg., 1907, vii, 672.
12. Apfelbach, G. L.: Bull., Dept. Factory Inspection, State of Illinois, 1913.

nounced cyanosis and a slight difficulty in swallowing and in speech. The reflexes were normal. Examination of the blood revealed: hemoglobin, 100 + per cent.; red cells, 5,734,600; while count, 8,200 differential: polymorphonuclears, 72.8 per cent.; large mononuclears, 0.5 per cent.; small mononuclears, 20.2 per cent. The spectroscope showed methemoglobin lines. The urine was dark, smoky color, specific gravity 1.028, no albumin, no sugar, casts, etc. Employees in this printing shop had noticed the same change of complexion in other men engaged in this work, but never so severe as in this case.

Dr. Apfelbach's second patient was employed in a large dry color factory, mixing colors in an open chaser, work which he had done for several years. Occasionally he would notice that the mixture in the chaser would give off "steam" which made him sick, and this had been true just before he applied to Dr. Apfelbach for advice. The other men in the shop had alarmed him about his blue color, and he himself complained of headache, vertigo and difficulty in swallowing. The examination in this case was negative except for the presence of methemoglobin in the blood.

Birge's cases, already quoted, were next reported in 1914; and in 1915 E. R. Hayhurst,[13] in the course of his investigations of Ohio industries, found anilin poisoning in printing shops and rubber works in that state. Three cases had occurred among men employed at rubber mixing mills. The inspectors were also told of more serious poisoning among printing pressmen who used a roller wash rich in anilin. In several instances the use of this had caused loss of consciousness lasting several hours and accompanied with cyanosis.

In the course of an investigation for the federal Bureau of Labor Statistics of poisonous substances used in the rubber industry, we[14] collected some evidence concerning anilin poisoning in the chief rubber city of the country, Akron, Ohio. Anilin is used as an aid and an accelerator of vulcanization in heat curing of rubber, chiefly in tire works. Five plants in Akron were known to be using it and probably several others did. "Anilin substitute" — perhaps thiocarbanilid — and "anilin salt" — the hydrochlorid — are used in other plants. The danger is found in the room in which the compounds are measured out, on the mills on which the compounds are warmed and mixed together, and even on the calendars, on which the rubber is sheeted. The odor is plainly recognizable in all these places, unless special precautions are taken to prevent fumes by providing tightly covered receptacles and by good exhaust ventilation over the mills.

As rubber reclaiming is a process carefully guarded from the public because of trade secrets, it was not possible for us to visit any of these plants; but we found reason to believe that most of the cases of anilin poisoning in Akron — as is true in Germany — come from this branch of the industry. Not only the secrecy of the processes made it difficult to collect evidence of anilin poisoning, but also the fact that foremen and superintendents are naturally unwilling to admit that there is any danger from a substance which is in use in the factory. If, however, they are no longer using it, they may be quite willing to tell of its disadvantages. In a tire factory when no more anilin could be procured, the foreman said frankly that he was thankful not to have to handle it any more, for he had had so much trouble from the fumes among the men at the mills.

13. Hayhurst, E. R.: Industrial Health Hazards and Occupational Diseases in Ohio, Ohio State Board of Health, 1915.
14. Luce, R. V., and Hamilton, Alice: Bull. 179, U. S. Dept. of Labor, Bureau of Labor Statistics.

An interesting case indirectly connected with the rubber industry was described by an Akron physician. An old boiler was sold by one of the rubber factories, and the boiler repairer who undertook to clean it and put it in order had a typical attack of anilin poisoning.

The manufacture of anilin from benzene had begun only a short time before our investigation in Akron, but already one factory had a daily output of about 2,500 pounds and employed about fourteen men in two twelve hour shifts. In spite of a good system of exhaust ventilation which is said to have been installed, the men suffered from the fumes, and we were told that during the first four months of operation the factory lost no less than fifteen men from this cause, though it was not easy at that time to find work in Akron. The regular force was from twelve to fourteen men working in two shifts.

Shortly before the investigation referred to above, a severe case of anilism had occurred in one of the rubber factories. In this instance the poison seems to have entered both by the skin and by the lungs.

The patient was admitted to the City Hospital of Akron in a state of coma that lasted nine hours. He was deeply cyanosed, his temperature was 97.6, and pulse 116, fluttering and weak. The reflexes were normal save for a slight sluggishness of the pupils. Urine examination was negative. The patient was put to bed and given inhalations of oxygen and heart stimulants, aromatic spirits of ammonia, camphorated oil, strychnin and digalen. The temperature remained subnormal for six hours. After nine hours he regained consciousness and was discharged the following day, feeling a little weak and slightly nauseated, but otherwise normal.

His history was as follows: He was working in one of the rubber factories, and at about 1 p. m. he spilled a can of liquid over his clothes. He said it had a peculiar alcoholic odor, and when it came in contact with his skin it felt burning. The fumes were very noticeable, but he kept on at his work for about two hours more, though conscious that something was wrong. Then he began to have severe palpitation of the heart, he noticed that his face was flushed, he grew dizzy, and a violent headache came on and presently nausea, and he vomited several times. He was taken to his home, where the cyanosis kept increasing in intensity, and at about 6 in the evening he lost consciousness and was brought to the hospital. Consciousness returned at about 3 in the morning. Investigation showed that the fluid he had spilled was anilin.

Since the publication of the government report, several additional cases have been observed by one of us in connection with the rubber industry in Akron. One of them is of special interest in that we have accurate data as to the exact time of exposure to the fumes before the onset of very typical symptoms of the more intense, acute form of poisoning.

J. E. was first seen July 24, 1915. He was in profound coma, his breathing was stertorous and his pulse was irregular and of very poor quality. He was so cyanosed that the skin over his whole body was a deep plum color. That morning at 7 he had gone to work feeling perfectly well in every way and, according to the history obtained, he was exposed to fumes of anilin for an hour and forty minutes before he began to notice any symptoms of depression. First came throbbing in the head and increasing nausea, which he thought were due to the hot weather and the poorly ventilated room. He next noticed palpitation of the heart, and then a violent headache came on, increasing in intensity and accompanied by vertigo. As he said, "I felt as if I had been standing on my head for a long time and that every ounce of blood in my body had rushed to my brain." The dizziness increased and he lost consciousness completely about forty-

five minutes after the onset of the first symptoms. He was picked up by the other workmen and rushed to the hospital, where oxygen was administered as well as heart stimulants but apparently with little effect. The cyanosis persisted, the heart action was very feeble and remained so for over sixteen hours, and he did not regain consciousness till the morning of July 25, a period of about twenty-two hours.

A catheterized specimen of urine obtained on admission showed nothing of note, but a second examination was made eighteen hours later, when it was found to be smoky, specific gravity 1.022, there was a trace of albumin, no sugar, and the presence of hemoglobin was detected by the Heller test and by the Schönbein-Almèn turpentine-guaiac test, which is even more delicate than the spectroscopic. This hemoglobinuria persisted for five days.

A blood examination made on entrance gave normal findings in all respects except for a slight eosinophilia, but four days later there were stippled red cells and some irregularity in the size and shape of the reds. The hemoglobin then was 75 per cent. (Sahli).

The patient suffered from severe headache for five days and complained of weakness and exhaustion for at least two weeks longer, after which he improved slowly. He was warned not to expose himself to this danger again.

The second case is cited because it is representative of the slower and much less typical forms of anilin poisoning: H. M., a chemist employed in the research laboratories of one of the large rubber companies of Akron, was seen Nov. 1, 1915. He complained of palpitation of the heart, dizziness, marked muscular weakness and occasional nausea and violent headaches. On close questioning it became evident that the palpitation of the heart was worse and headache was more apt to come on during active work, and that this work often consisted in the handling of a compound containing anilin. Most of the work was carried on under a hood, but he admitted that the odor of anilin was at times quite noticeable. He had been doing this sort of work for months, and said that he had never been cyanosed and never had had to lose a day from the laboratory.

An examination of the urine showed nothing abnormal: The red cell count was 5,400,000, but the hemoglobin only 68 per cent., and a stained smear showed pale, unevenly staining reds. Physical examination revealed nothing of note except a rapid heart action; the pulse was 94.

On this scanty evidence the patient was advised to give up his work and find some outdoor occupation, which he did, and as a result the symptoms disappeared entirely in six weeks.

The third patient, a lad of 18 years, was also employed in the research laboratories of one of the rubber companies. He was given a special problem to work on, which involved the grinding and mixing of certain compounds together with anilin. He did it in a corner of the room where the fumes could not spread and expose the other workmen. After working in this way for a few weeks he began to suffer from a dull headache which persisted all day. Then one day he became conscious of a severe throbbing in his head, and his face became cyanotic. He stopped work for the day and came back the next morning feeling fairly well, but it so happened that the ventilation was unusually poor that morning and the fumes very noticeable. After just one hour's work he lost consciousness and remained in a deep coma for over twenty-four hours. He was very cyanotic and his heart action was weak; at times he was almost pulseless. Camphorated oil administered hypodermically seemed to exert a better effect than did the oxygen which was given continuously for twelve hours. In this case no blood examination was made; the urine was at first bright red, later a smoky black.

Examination of the histories of a large number of cases of anilin poisoning reveals interesting facts as to the varying susceptibility of men to this poison. We have already noted the increased sensitiveness of heavy drinkers. It seems also that men of dark hair and complexion are less susceptible than blonds, as has been observed in one of the large rubber works where records have been kept of over fifty cases of poisoning. Furthermore, it is found that young men are more susceptible than are the middle-aged, especially to the acute, violent form of anilism.

CONCLUSIONS

Commercial anilin is a well known industrial poison in Germany and in Great Britain. It is just beginning to be known in the United States, where it has already been the cause of numerous cases of poisoning among men engaged in the manufacture of rubber goods, in reclaiming rubber from scrap, in making anilin from benzene, and in using certain washes for press rollers.

It is a blood poison, causing the formation of methemoglobin with the consequent "internal suffocation."

Poisoning may take place through the skin or the lungs. Usually in industrial cases both portals of entry play a part.

Exposure to the fumes need not be excessive or long-continued to bring about serious symptoms in the susceptible.

Young men are more susceptible than the old or middle-aged, blonds than dark-haired men, heavy drinkers than the temperate.

Hot, humid weather, heated rooms and poor ventilation are important factors in the production of acute anilin poisoning.

Early recognition of anilin poisoning is of prime importance so that the sufferer may be withdrawn from the danger of further exposure to the poison.

Men working in anilin constantly seem to acquire a certain amount of tolerance to it; nevertheless, if the exposure is increased beyond the point of tolerance, there is apparently a cumulative effect, and symptoms of chronic poisoning result. After symptoms of poisoning have once manifested themselves, the patient is usually hypersensitive to the fumes.

The treatment consists in fresh air, oxygen and heart stimulants, especially camphorated oil. Prevention of subsequent exposure is imperative.

AN OUTBREAK OF TYPHOID ATTRIBUTED TO INFECTED OYSTERS

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An outbreak of typhoid fever, comprising fifty cases, which presented itself during November and December, 1916, in the city of Binghamton and in certain nearby municipalities in Broome and Chenango counties, offered an unusual opportunity for epidemiologic study, and proved particularly interesting since it was demonstrated with reasonable certainty that it was due to infected oysters.

Typhoid fever had prevailed to some extent in Binghamton and vicinity prior to the recent outbreak. Table 1 indicates the municipalities involved in this outbreak, the population of each, and the number of cases which had occurred during 1915, prior to November 1.

During the recent outbreak, cases appeared in each of these municipalities as follows: Binghamton, 25; Johnson City, 10; Windsor, 6; Norwich, 5; Oxford, 3; Greene, 1.

During December it was noted that an unusual number of cases were being reported at practically the same time from these various municipalities, in some of which, as will be noted (Table 1), there had previously been no cases for at least ten months. This naturally excited a suspicion that there might be a common origin.

Johnson City is a village practically continuous with the city of Binghamton; Windsor is situated about 15 miles from Binghamton; Greene, Oxford and Norwich are located on a division of the D. L. & W. Railroad, 20, 33 and 42 miles distant, respectively, from Binghamton.

TABLE 1.—OCCURRENCE OF TYPHOID IN 1915 PRIOR TO NOVEMBER

Municipality	Population	Cases prior to Nov. 1
Binghamton	53,668	24
Johnson City	5,400	6
Windsor	2,384	None
Norwich	8,342	2 (April and May)
Oxford	3,073	None
Greene	2,959	None

December 15, through conference with the health officer of Johnson City, it was learned that three of the four patients then reported as having typhoid fever were known to have had raw oysters at a time consistent with the period of incubation, while nothing else in common had been discovered. It was learned on inquiry from one of the local retailers, who had supplied two of the patients, that much of the oyster trade in Binghamton and nearby towns was supplied by two Binghamton wholesale houses, from one of which he had received his supply.

The following day at Windsor it was found that in the cases then reported, occurring in two families situated at a distance from each other, one family living in the village and the other in the country, oysters from the same source had also been eaten raw at the proper time.

In the city of Binghamton, the records of the health officer showed that attending physicians in a few cases had reported "oysters" as a possible source of infection.

These incidents, together with the reports received later from health officers of other municipalities, led to a strong suspicion that oysters were among the possible sources of infection. Owing, however, to the relative rarity of authentic oyster outbreaks, it was still assumed that some other source of infection would be discovered.

About January 1, because of the number of cases reported and the difficulties encountered, it was deemed advisable for the sanitary supervisor temporarily to lay aside all other work and give his entire time to a detailed investigation. Mr. C. A. Ferrin, an inspector of the Division of Cold Storage Inspection, was assigned to assist in tracing shipments of oysters from their source, through the wholesalers, to the large number of retailers involved; while Dr. F. M. Meader, director of the Division of Communicable Diseases, gave advice and assistance throughout the investigation. This included a house-to-house study of the cases, the thorough investigation of all "clues" to other possible sources of infection, such as water, milk and its products, celery and other raw vegetables and fruits, association with other cases, carriers, etc. As already indicated, it also included a detailed study with reference to oysters as a possible agent in the transmission of infection.

It was found that the dates of onset ranged between November 15 and December 18, with the greatest incidence of onsets at about November 21 and December 2, the dates of onset in all the municipalities being practically coincident.

Of the various agents investigated, it was evident that water could not be a common source of infection, since each municipality had its own supply. Reports of bacteriologic examinations of the water supply of the city of Binghamton, made almost daily during November, did not indicate infection. In Binghamton the cases were scattered over the routes of nineteen different milk dealers. A clue which might have cast suspicion on the milk of one dealer came to naught when it was found that he was among the few who had no cases on their routes, and that he sold no milk except at retail. Naturally, at Thanksgiving time and at Christmas, a considerable number of persons had eaten celery. It was found, however, that there was no common source of supply, and investigation of a number of truck farms supplying celery led to its elimination.

The study to determine the possible relation of oysters to the outbreak proved most interesting and instructive. Incidentally, it was noted that there were no cases occurring among the very poor, of which class Binghamton naturally has its share. If water or milk had been the responsible agent, it might reasonably have been expected that the very poor, as well as those in comfortable circumstances, would have been affected.

It was found that thirty-eight patients, or 76 per cent. of the total number, fifty, were definitely known to have had oysters — a few having eaten them to excess — on a date consistent with the period of incubation. This period was determined by going back one week, and assuming that infection may have occurred at some time in the preceding two weeks. Most of the patients had eaten the oysters raw. In one instance they had been fried, and in others stewed.

It was found that the common practice, in preparing oyster "stew," was first to "bring the water to a boil," after which the oysters were added. They were not boiled, as this process is said to make them "tough." It is apparent, therefore, that the process of cooking, as ordinarily practiced, is not likely to sterilize infected oysters effectively.

The results of investigation in the remaining twelve cases, or 24 per cent. of the total number, not included in the foregoing are summarized in Table 2.

TABLE 2.—CASES OF TYPHOID NOT DIRECTLY TRACED

	Number of Cases
Oysters, raw, at about the date given as that of onset	4
Oysters, raw, at the right time but apparently not from the common source	1
Diagnosis apparently incorrect	1
Outside infection probable	1
Secondary	2
Not determined	3
Total	12

In regard to the source of supply of the oysters consumed, it was found that they had been purchased from a large number of retailers. There were in Binghamton six wholesale distributors; much of the retail trade, however, both in Binghamton and in the other municipalities, had received its supply from one or the other of two of the larger distributors, whom we will designate as A and B. It was found that twenty-seven of the thirty-eight definite oyster cases

had in all probability had oysters supplied by A, while those eaten by ten came from B. In one case the source of supply was not determined. In other words, practically all of these cases, located in six different municipalities, had oysters believed to have been supplied by only two out of six wholesale dealers. These oysters were received by the wholesalers in sealed gallon cans, and were said to have been sold to the retailers without the cans having been opened.

Wholesaler A, in turn, received his supply from two Maryland firms of packers, one in Baltimore and the other in Cambridge, while B was supplied wholly by one packing house in Baltimore. It was stated that none of these Maryland packing concerns owned any oyster beds, but that each in turn received its supply from nine or more "shucking" houses, scattered through Maryland. At the time of writing, the matter of determining, if possible, the ultimate source of the oyster used, and whether a single "shucking" house may have supplied some of the oysters which reached both A and B, is in the hands of organizations outside of New York State. At the time of the receipt of the last report, it had been impossible to determine the source of those shipped to this section of New York State.

It is interesting to note that, at the time of our investigation, oysters from one of the Maryland packers mentioned above were under suspicion in connection with outbreaks of typhoid fever in three cities in Illinois.

Since a large number of persons other than those who developed typhoid ate oysters from the common source mentioned, while practically all of those who have been included as "oyster cases" had oysters from the same source, the inference is that, mixed with the oysters received by the two Binghamton wholesalers, were small quantities of infected oysters. From the incidence of the dates of onset, it may perhaps be assumed that the infected oysters were included in two shipments, one about November 1, the other shortly before Thanksgiving day.

SUMMARY

In November and December, fifty cases of typhoid fever occurred in six municipalities, in three of which there had been no cases in over ten months, and in one none in five months. There was apparently no possible common source of infection other than oysters purchased from various retailers, these retailers having been supplied by two of six wholesalers. In the thirty-eighth case the source of the oysters consumed was not determined, but presumably it was the common one. The two wholesalers received their supply from three Maryland packing houses, each of which drew for supply on a large number of small "shuckers" scattered throughout Maryland. Whether oysters from one "shucker" reached both of the Binghamton wholesale houses remains to be determined if possible. Apparently the infected oysters were received in two shipments, one in November, the other in December. It may be added, in conclusion, that there have been no cases in these municipalities, other than secondary, since that time.

NOTE.—Under date of April 5, I have been advised that it has been impossible to locate with certainty the source of the infected oysters responsible for this outbreak; that there are two small areas regarded as especially dangerous, one near the outfall of a sewer on which is a hospital, and that oysters from these areas have been sold during the past season.

VITAMIN SOLUTION OF THE PELLAGRA PROBLEM

A PRELIMINARY NOTE *

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A number of writers[1] have suggested the possibility of the solution of the pellagra problem in a vitamin removed in the process of milling, but there has been no experimental or clinical evidence worthy of serious consideration.

There is no doubt in the minds of a large number of the students of pellagra that the deficiency theory of Dr. Joseph Goldberger[2] is correct. This report is based on the correctness of his theory. The present work had its inception in an idea suggested by Dr. Goldberger pointing out the analogy between pellagra and beriberi. Reviewing the beriberi situation as it stands at this time, one is impressed with the fact that it is not essential to eat rice in order to suffer the disease, but that it is highly improbable that beriberi will ever become a great economic problem except in rice eating countries, though sporadic cases are occurring even in this country. With this idea in mind, one naturally turns back to the old theories that pellagra was caused by defective corn. An effort was made to determine if corn suffered in the milling process. The work was planned entirely from the standpoint of a deficiency, and developments soon justified the strong suspicion that the protective vitamin was removed by milling, just as the vitamin is removed in the milling of rice when the product is polished rice.

Until recent years,[3] in the South especially, corn was simply crushed between two stones, and the power was that of the stream nearby. Each neighborhood had its own mill. The only thing removed was the coarse particles of outer skin or husk. This method of milling has been largely replaced by steam or electric milling. By this process the corn is subjected to heat in order to loosen the outer coarse husk. Our attention at this time is directed to this portion of the industry to determine how much heat is employed. In the modern mill, in which these observations were made, the heat is a negligible quantity; but it must be remembered that 120 C. is sufficient to destroy any vitamin that may be contained. This part of the work, therefore, cannot be too strongly emphasized. After the heating process the grain is passed into a "degerminator," which removes the germ. This is done because the germ contains such a large amount of fat that rancidity would soon occur if it were left in the meal. Besides this, the germ would give to the meal a yellow color which by modern standards is counted undesirable. The offal, which contains the germ, husks and bran, some flour and flinty portions of the grain, constitutes about 30 per cent. of the entire weight of the grain. It is known as "corn chops," and is fed to the cattle. The remaining endosperm, after the removal of the offal, is finely ground, and the product is known as granulated corn meal; but in this article it will be referred to as milled meal.

* From the Public Health Laboratory of the City of Wilmington and County of New Hanover, North Carolina.

1. Castellani and Chalmers: Manual of Tropical Diseases, Ed. 2, 1913. Stitt: Diagnostics and Treatment of Tropical Diseases, 1914.
2. Goldberger, Joseph: Pellagra: Causation and a Method of Prevention, THE JOURNAL A. M. A., Feb. 12, 1916, p. 471.
3. Farmers' Bull. 298, U. S. Dept. Agric.

Nightingale[4] found that prisoners who had been fed on whole meal ground in the jail did well, and were free from disease. Owing to a crop shortage, he was forced to use milled meal, and there soon developed a disease for which he coined the term "zeism," thinking it to be an undescribed condition. The symptoms were symmetrical erythema of the exposed portions of the body surface, sore mouth, digestive disturbances with diarrhea, and even mental symptoms. He says that it somewhat resembled pellagra, but was not that disease, even if an acute form of it occurred. In 1905 the failure in making the diagnosis was because we did not recognize an acute form of pellagra which is unknown in European literature. A careful reading of Nightingale's paper will convince any one who has seen pellagra in America that this disease could not be otherwise diagnosed. Certainly if it is not pellagra, then the disease going by that name in the United States has been erroneously classified. No better animal experiment will ever be done than this experience of Nightingale to confirm the correctness of our belief that the protective vitamin is removed from corn by the present method of milling. He says that after he found that commercial corn meal caused the trouble, he secured a fresh lot of corn and had it hand milled in the jail. The result of its use is declared "immediate and magical."

Following the general plan of investigation in polyneuritis gallinarum, pigeons were selected for feeding experiments. One group was fed the best commercial meal on the local market. The result was very striking. Polyneuritic symptoms developed almost at once, and other symptoms which are exceedingly suggestive of pellagra. Among these are redness of the legs, weakness, and loss of feathers with the prospect of prompt death. The next group of pigeons was fed on the best corn, which was not kiln dried, and it was ground in the laboratory at the feeding time. These pigeons have made a striking contrast with the former group. In spite of the fact that the only food allowed was corn, they have remained perfectly healthy and active.

In a search through the mountains of North Carolina, I have found no cases of pellagra in those counties removed from the lines of railroad travel. The mountaineer lives on much the same food and in equally as unhygienic conditions as the lowlander, but there the difference in the corn is again quite striking. The mountaineer is too far away from the railroad to get milled meal, so he must send his corn to the local mill, where it is ground in small amounts at a time, and the whole grain is eaten, giving him the necessary protective substance. The man in the low country can get the meal from the village store, and thereby save the time and labor of a man and a mule to send to the mill. In so doing he fails to get the protective substance, and unless his diet is otherwise adapted to supplying the vitamin, pellagra should naturally follow. In an eastern county remote from railroad travel, there are broad areas where pellagra has never been seen, and it is notable that the people eat water-ground whole meal. In all other respects this county seemed to be peculiarly suited to pellagra, and the fact of its absence has always been very puzzling.

Beriberi occurs sporadically among those who never eat rice, but it will never be a great economic problem except in those countries in which rice forms the chief food. Pellagra, likewise, may occur in those who never eat corn, but will probably never reach any proportions except in corn-eating people. Both diseases are deficiencies, and the deficiencies may, and frequently are, made up by other wholesome vitamin-supplying foods, even when deficient grain is eaten.

These observations lead me to believe that it is probable not only that pellagra is a deficiency disease, but also that the deficiency can be definitely placed in the modern method of corn milling. It would appear, therefore, that the eating of the whole grain in corn countries will stop the ravages of pellagra. Deterioration of corn is productive of pellagra because the germ is the portion of the grain most subject to the action of molds and animal parasites.

In a subsequent report, the action of an alcoholic extract of corn chops on the pigeons made sick by milled meal will be described.

4. Nightingale: Zeism: A Disease Caused by Defective Mealie Meal, Transvaal Med. Jour., July, 1912.

FURTHER OBSERVATIONS ON THE SCHICK TEST FOR DIPHTHERIA IMMUNITY *

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AND
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About a year ago Weaver and Maher[1] reported some observations on the Schick reaction as it had been employed by them in the Durand Hospital. Since then the test has been used quite extensively in our hospital work and has proved of much advantage. We consider it one of our valuable diagnostic measures. The present report deals with some of our experiences with the test during the past year.

A slight modification in the technic of making the intracutaneous injection has been devised by Dr. Rappaport. The skin on the outer side of the arm is rendered tense by clasping the arm from behind. The needle is first thrust into the skin at right angles to the surface to a depth of about one-eighth inch. The direction of the needle is then changed so that if it were carried forward it would emerge about one-half inch from the point of entrance. The needle is then carried forward in this direction until the point is plainly visible within the epidermis. The injection is then made and the needle withdrawn. The advantages of this method over the old one are that it is less painful, requires less time, and the danger of any escape of fluid from the puncture is obviated. The toxin has always been so diluted that one-fiftieth minimum lethal dose was contained in 0.1 c.c. The test injection has been made on the outer side of the right arm, and at a corresponding point on the left arm was made a control injection consisting of the same amount of toxin plus several hundred times the amount of antitoxin required to neutralize the toxin. The mixture was so made that the amount injected was here also 0.1 c.c. The actual quantity of serum injected was from $\frac{1}{2000}$ to $\frac{1}{3000}$ c.c. of an antitoxin globulin solution.

Dilutions of toxin were prepared at intervals of from four to six weeks, the diluted toxin being distributed in tightly sealed bottles holding 5 c.c. and kept

* From the Memorial Institute for Infectious Diseases.
1. Weaver and Maher: Jour. Infect. Dis., 1915, xvi, 342.

in the refrigerator. No preservative was added. A bottle was used for only a few tests, being always kept at a low temperature when not in use. We have observed no deterioration of the diluted toxin when preserved in this manner. The toxin-antitoxin mixture for the control injections was used for only a few days, a new mixture being then prepared.

During the year, tests have been made on 194 healthy young adults. Of these, 52.6 per cent. gave negative results. These tests are shown in Table 1,

TABLE 1.—RESULTS OF TESTS IN HEALTHY YOUNG ADULTS

	Number of Cases	Positive Results	Negative Results	
		Number	Number	Per Cent.
1. Nurses, Durand Hospital	44	18	26	59.1
2. Interns, Durand Hospital	6	3	3	50.0
3. Medical students	51	22	29	56.9
4. Nurses, X Hospital	71	44	27	38.0
5. Other adults	22	5	17	77.3
Total	194	92	102	52.6

in which they are arranged in groups. The first three groups include senior and graduate nurses and senior medical students. They were from 25 to 30 years of age, had lived largely in the country until taking up their professional studies, and had come in contact with diphtheria to a limited extent. In Group 4 were pupil nurses in a general hospital which does not admit contagious diseases. These nurses were in various stages of their training, and on an average were younger than those in Group 1 and had probably come in contact with diphtheria to a less extent. Group 5 included persons who were older than those in the other groups and who had come in contact with all sorts of infections to a greater extent.

It seems reasonable to account for the increasing proportion of persons immune to diphtheria with increasing age as resting on a production of immunity (that is, antitoxin) under the influence of mild and often unrecognized infections by diphtheria bacilli. We have been able to follow the course of events in three patients who came to the hospital after suffering several days from a mild diphtheria. On admission they still had slight angina but no pseudomembrane, and they showed little evidence of illness. They had received no antitoxin previously and, as they were apparently recovering, they were given none. At the time of entrance a positive Schick reaction was obtained and virulent diphtheria bacilli were cultivated from the throat. Schick tests were made at intervals, and negative results were obtained in a week to ten days in all. It is well known that diphtheria carriers are uniformly immune and give negative Schick reactions. It seems probable that many carriers originally suffered from a mild diphtheria, following which immunity developed. Numerous bacteriologic studies of apparently healthy persons have revealed from 1 to 6 per cent. of carriers in the groups examined. The studies have included large numbers of persons, and indicate that a relatively large number of carriers are constantly present among apparently healthy people. In 1913-1914, Goldberger and Williams[2] endeavored to learn how widely diphtheria bacillus carriers were distributed in Detroit. In a study of cultures from over 4,000 representative individuals, they found about 1 per cent. of carriers, making a probable total of from 5,000 to 6,000 in the entire population of the city. If we infer that each of these carriers has become immune through a previous mild infection, we can realize that the proportion of immune individuals is thus being constantly added to.

We have found the Schick test of much diagnostic value in carriers who are sick from other anginas than diphtheria. Especially when opportunity for infection by diphtheria bacilli is known to have occurred, any sore throat arouses suspicion. In such cases in which a diagnosis from clinical appearances is impossible, we are accustomed to make a Schick test and wait for its development and for cultures to grow. If the patient gives a negative result from the intracutaneous injection, no antitoxin is given, even though diphtheria bacilli are found in cultures. Such a case is recognized as one of angina from some cause in a diphtheria carrier. This means of diagnosis is not available if the patient has been given antitoxin. Antitoxin given intramuscularly before or simultaneously with the toxin usually completely inhibits the reaction. We have secured positive reactions in some instances in which the antitoxin followed the toxin after an interval of half an hour. Antitoxin given from three to six hours after the toxin often prevents the reaction entirely or modifies it in a marked degree.

Three cases of postdiphtheritic paralysis have been tested by this means for the presence of antitoxin. In two the result was entirely negative, indicating, as have most studies of the subject, that further injection of antitoxin is useless. In one of the cases we secured a positive reaction, and following the administration of antitoxin the advancing paralysis stopped abruptly, and the patient recovered very rapidly. We would not lay too much stress on this single case, but in cases of paralysis following diphtheria giving a positive Schick reaction the administration of antitoxin would seem to be a proper procedure.

Tests were made in sixty-six cases of scarlet fever, and the results are shown in Table 2.

The proportion of children between the ages of 2 and 5 years who gave negative results is relatively large as compared with the statistics of most observations on children of corresponding age. Our patients come almost exclusively from the most unhygienic and overcrowded districts, in which contagious diseases are constantly present and in which diphtheria is often very prevalent. The opportunities for these children to be infected by diphtheria are very abundant, and the large proportion of immunes may be thus explained.

TABLE 2.—RESULTS OF TESTS IN SCARLET FEVER PATIENTS

Age, Years	Number of Cases	Positive Results		Negative Results	
		Number	Per Cent.	Number	Per Cent.
From 1 to 2	5	3	60.0	2	40.0
From 2 to 5	21	7	33.3	14	66.7
From 5 to 15	28	6	21.0	22	79.0
From 15 to 24	12	6	50.0	6	50.0
Total	66	22	33.3	44	66.7

Twenty patients with tonsillitis were tested, and eighteen, or 90 per cent., gave negative results. The results are shown in Table 3.

In a few instances the reaction of a positive Schick test has appeared to be followed by antitoxin production. In three instances in which persons gave positive reactions, negative ones were given two and one-half, three and four months later. In the interval no antitoxin was administered. In most instances Schick tests made one and two months after a primary positive one also resulted positively, but the later ones

2. Goldberger and Williams: Bull. 101, Hyg. Lab., U. S. P. H. S., 1915.

were often apparently modified, although not completely inhibited. That the reaction should be followed by a limited antitoxin production is probably to be expected.

Occasionally at the height of a positive reaction a vesicle forms at the center or margin of the red area. This quickly dries and is evident only in the further evolution of the process in a rather more pronounced sealing. We have observed this in four normal persons, in two cases of scarlet fever and in one of diphtheria.

Several things of interest have been observed in connection with the control of toxin-antitoxin injections. Since the toxin is here neutralized, an entire absence of reaction is usually associated with a positive reaction in the test arm. A pseudoreaction is usually associated with a similar one in the control. A pseudoreaction in both arms sometimes subsides in two or three days, leaving a typical reaction in the test arm which runs a typical course. The control injections sometimes cause reactions which have no counterpart in the test arm, and are due to the serum injected. In persons who are hypersensitive to horse serum, a local reaction develops at the seat of injection. This usually appears within twenty-four hours, and consists of a bright redness, swelling and slight pain on manipulation. The area involved may be only a few centimeters in diameter or may extend half-way about the arm. These reactions were especially noted in persons

TABLE 3.—RESULTS OF TESTS IN TONSILLITIS PATIENTS

Ages, Years	Number of Cases	Positive Results Number	Negative Results Number	Negative Results Per Cent.
From 1 to 5	3	1	2	66.6
From 5 to 15	7	1	6	85.7
From 15 to 29	10	0	10	100.0
Total	20	2	18	90

who had received antitoxin some time before. Occasionally they appear in persons who have never previously received horse serum. In one such individual a very severe local reaction followed the control injection. Blood was drawn from the patient's vein, and of the serum 4 c.c. were injected intraperitoneally into a guinea-pig with no apparent effect. Twenty-four hours later, 5 c.c. of normal horse serum were injected intraperitoneally. Anaphylactic symptoms appeared shortly, became very pronounced in two hours, and the pig died nineteen hours after the second injection. At necropsy the usual changes associated with anaphylaxis in the guinea-pig were present. The patient yielding the serum has been subject to frequent attacks of severe urticaria from unknown cause.

Another patient who had received diphtheria antitoxin three or four years previously was given the usual toxin-antitoxin control injection. There followed an accelerated reaction consisting of local redness and swelling and a mild urticaria of the face and arms. In still another patient the two injections were given with a resulting severe positive reaction on the test arm and a slight pseudoreaction on the control arm. Ten days later the tests were repeated. The test arm was entirely negative, while the control arm showed a severe local reaction which was well developed in forty-eight hours and associated with a red macular eruption over the extensor surfaces of elbows and knees. In other cases a local sensitization has appeared after a second or third injection, the previous ones having caused no disturbance. It is remarkable that sensitization and reactions were brought about by such small amounts of horse serum, from $\frac{1}{2000}$ to $\frac{1}{3000}$ c.c. The occurrence of a marked local reaction, especially with a primary injection, would direct attention to an individual susceptibility for horse serum and warn one of the necessity of care in the administration of serum if it should be required by the individual.

For two years we have tested in a routine way all nurses coming to Durand Hospital. Those who gave positive results were given 1,000 units of diphtheria antitoxin. These persons were retested every month and were reimmunized when a positive reaction again appeared. Since this procedure has been adopted, no case of diphtheria has occurred among the nurses.

PYLEPHLEBITIS FOLLOWING APPENDICITIS

WITH REPORT OF A CASE

H. H. LISSNER, M.D.
LOS ANGELES

History.—T. R., boy, aged 12, whom I saw, May 30, had high fever with coryza, photophobia, decided bronchial symptoms and Koplik's spots. A diagnosis of measles was made. A rash appeared, June 1; the temperature was 103, pulse 100, respirations 20. Following the eruption the temperature declined, registering 100, June 2. On the evening of this day the temperature rose to 103.4, with an increase of bronchial symptoms and cough and a patchy dulness posteriorly over both lungs but without sputum. At this time the boy complained of slight pain in the abdomen, though examination gave no evidence of any abdominal trouble. On the following day at 3 p. m. he complained of a slight chilly feeling lasting about five minutes. At 4:45 his temperature registered 104.6, pulse 112, respirations 32. At 6:30 p. m. there was another slight chill lasting thirty minutes, following which the temperature was 104, pulse 130, respirations 28. Blood smears at this time were negative for plasmodia. The urine was highly colored, and showed no diazo, no albumin and no bile or casts. June 4, there was a slight chill without much temperature response. June 5, in the early morning, there were two chills, one lasting twenty minutes. About this time we noticed some rigidity and slight tenderness in the liver region; but no pain had been complained of since the onset of the lung symptoms. The boy would play and move about in his bed without any apparent discomfort. The chills continued irregularly from this time until June 9, with a septic type of temperature without any localizing symptoms other than the slight rigidity and tenderness. A blood culture by Dr. Zeiler was negative. On the morning of June 9, the lung findings had cleared and it was noticed that the conjunctiva was icteric; there was pain and rigidity over the entire right rectus, the pain being more marked over the appendix, and the rigidity more pronounced over the liver area. The blood count showed 8,800 whites, polymorphonuclears 72 per cent., lymphocytes 16 per cent., large mononuclears 8 per cent., eosinophils 2 per cent. Urine: Specific gravity 1.016, negative albumin, sugar and acetone, no casts, bile pigment present. The boy was removed to the California Hospital, where he was operated on by Dr. W. W. Richardson.

Operation and Course.—Because of the more pronounced symptoms over the liver, an upper rectus incision was made, disclosing a markedly congested liver without mottling. It did not show any sign of liver abscess and it was not particularly enlarged, lying about the level of the costal arch with the lower edge sharply rounded. The gallbladder was distended, but normal in appearance. There was no free pus in the peritoneal cavity. In view of this practically negative liver condition, the appendix was explored through the

same wound, and it was found to be bound down by adhesions, with its apex lying in a hardened mass about the size of a walnut. It was brought out through the abdominal wound, disclosing a small perforation in its extremity. The tissue about the appendix was necrotic with fecal odor, but no pus was present. The appendix was removed, a drain established through a stab wound, and the upper wound closed. Following this operation the patient was free from chills for thirty-six hours; then there was a rigor lasting ten minutes, followed by profuse perspiration. June 13, a urinalysis showed a slight trace of bile and the presence of acetone and diacetic acid. About six days after the operation it was noticed that the conjunctival icterus was less marked. June 15, there was some nausea and vomiting of clear fluid and later on of a yellowish brown fluid. June 16, a diarrhea manifested itself by involuntary bowel movements, there being sixteen during this twenty-four hours. June 17, the urine still showed traces of bile with acetone and diacetic acid. There were seven bowel movements on this day, and vomiting occasionally occurred. The chills became much more severe, bringing a greater temperature response, more decided acceleration of the pulse and profuse perspiration. Quinin administered to the point of cinchonism had no effect on the chills.

Owing to the infection which was present, the sutures in the upper wound broke during one of the vomiting spells, and several coils of the small intestine protruded through the abdominal incision, which necessitated etherizing the patient to replace them. About June 20 the bowel movements again became more frequent, of a greenish brown color and of watery character, but no abnormal substances were found, and examination for parasites was negative. The blood count, June 21, showed white blood corpuscles 7,000, polymorphonuclears 81 per cent., lymphocytes 14 per cent., large mononuclears 4 per cent., eosinophils 1 per cent. A culture taken from the pus exuding from the appendix drain showed the colon bacillus. June 26, the patient had thirty-seven bowel movements. June 27, there were forty-four. June 28, there were eleven. These were controlled by bismuth and opium. June 30, there was some abdominal pain and distention, which gradually increased. There was also a cessation of bowel movements. Ileus being present, there was stercoraceous vomiting. A puncture wound was made in the small intestine, and a large quantity of fluid evacuated. At this time the chills were not so severe; there was much less temperature response, but profuse sweating. The principal effect, however, was noticed on the pulse, which became very much more rapid and thready, until finally the patient succumbed. Vomiting continued up to the very last.

Necropsy. (by Dr. Zeiler).—Inspection: Body of emaciated boy of about 12 years of age. On the right side of the abdomen were two wounds, and some purulent fluid evident. Both wounds had apparently been drained. The abdomen and thorax were exposed through a median incision and the removal of the sternum. The lungs showed hypostatic congestion. The pleura was negative. The pericardium and heart were normal.

Abdomen: The intestines on the right side were adherent to the abdominal wall, and many coils were matted together. On separating some of the adhesions, several small pockets of pus were encountered between the matted coils of intestine. The small intestine was distended. The colon was collapsed. One loop was adherent to the upper operative wound and had evidently been opened antemortem. On separating still further a large pocket of pus was encountered, bounded by the lower edge of the liver above, and extending to the lower abdominal wound below, and between the anterior abdominal wall and the intestine. Below this, in the abdominal cavity, extending from the appendicular region into the kidney pouch, was another pus collection. On carefully separating the coils of the intestine a volvulus, consisting of a half twist of ileum on itself and bound down by recent adhesions was discovered about 3 feet from the ileocecal junction. The intestines were removed, and the appendix stump, or the place where it had been, was not discovered. A small facet which was probably an appendicular orifice was found, but was well healed over. There was free pus in the pelvis. The liver was small, pale and mottled, suggesting possibly a fatty liver with no external evidence of abscess. However, on handling the liver before removal, an abscess on the under surface of the left lobe ruptured. The liver was then left in situ and the portal vein and its tributaries were dissected.

The portal vein was partly filled with a thrombopurulent mass; its gastric and splenic tributaries were normal, and the mesenteric branch was thrombosed with the same nature of material as was found in the portal vein. This thrombosis was followed down to one of the small branches leading to the appendicular region. Following the portal vein into the liver, numerous dark necrotic areas along the course of the radicles of the portal vein were encountered, many of them miliary, others several centimeters in diameter. Some contained small quantities of pus, while others had not yet reached that stage. The spleen was slightly enlarged and soft. The kidneys were enlarged and showed evidence of cloudy swelling. The pancreas was negative.

Anatomic Diagnosis: Phlebitis of the portal vein and superior mesenteric vein; multiple abscesses of the liver extending into the portal radicles; localized disseminated peritonitis; capsulated peritonitis; operative fecal fistula of the small intestine; acute splenic tumor; cloudy swelling of the kidneys; ileus; hypostatic congestion of the lungs.

STATISTICS

Babler[1] says:

Murphy states that multiple abscesses of the liver are a rare complication of appendicitis. Ochsner, Deaver and several other American surgeons have not seen more than one case. In 1903 Gerster reported 1,189 operative cases of appendicitis, in nine of which pylephlebitis was present.

According to Rolleston,[2] Langdon Brown reports but twelve cases out of 9,494 necropsies, or 0.12 per cent. In 257 cases of suppurating appendicitis, Fitz found suppurating pylephlebitis in eleven cases, and in 2,714 clinical cases of appendicitis collected from the various London hospitals, there were ten cases of suppurative pylephlebitis, or 0.4 per cent.

SYMPTOMS OF PYLEPHLEBITIS

Pylephlebitis, according to Deiulafoy[3] and Neusser,[4] occurs most frequently during the closed abscess stage of appendicitis late in the infection, and may follow even after the removal of the appendix. It is accompanied by sharp rigors, severe fever, pains in the hypochondrium, rapid increase in the size of the liver, jaundice, etc.

Babler[5] says:

Gerster mentions the fact that chills accompanied by a rapid rise of temperature observed during the course of appendicitis, however mild as to local symptoms, may and usually do signify the entrance of septic material into the portal and general circulation. They must be looked on as signs of the greatest import. Should the seizure pass into a continuous fever with dry tongue and retching, a clouded sensorium with a rapid rising pulse of deteriorating volume and quantity, the body temperature remaining above 103 degrees, with a tendency to mounting as high as 106 degrees or higher, the diagnosis of acute septicemia will be justified.

One of the earliest and most impressive diagnostic signs of portal infection is repeated chilly sensations or distinct chills. The chill is followed by high pulse rate,

1. Babler: Ann. Surg., May, 1915, p. 589.
2. Rolleston, H. D.: Diseases of the Liver, Gall Bladder and Bile Ducts, New York, The Macmillan Company, 1912.
3. Deiulafoy, G.: A Text Book of Medicine, New York, D. Appleton & Co., 1911.
4. Neusser, E.: Modern Clinical Medicine, vol. Diseases of Digestive System, D. Appleton & Co., 1910, p. 480.
5. Babler: Ann. Surg., May, 1915, p. 591.

marked elevation of body temperature and profuse sweating. When these symptoms follow in the wake of the early clinical manifestations of an acute appendicitis, and are associated with persistent pain in the region of the liver, jaundice, general depression, septic tongue, the finding of urobilin in the urine, and marked tenderness in the hepatic area without signs of peritoneal or pleural involvement, we may feel confident that the patient is suffering from septicemia due to multiple abscesses of the liver. Pain is very constant and precedes the jaundice. According to Strümpell,[6] epigastric pain is a constant symptom. Local tenderness, which is sometimes present when the liver cannot be felt to be enlarged, is more valuable as evidence of hepatic suppuration than pain referred to the right hypochondrium.

According to Babler, the diagnosis of multiple liver abscesses complicating appendicitis must rest on the following data: (1) the history showing that the appendix was the primary seat of trouble; (2) a shifting of the symptoms from the appendix to the hepatic region; (3) the progressive increase in the severity and the character of the symptoms; (4) the repeated chills followed by high pulse rate and marked elevation of body temperature; (5) the jaundice; (6) the persistent pain in the hepatic region; (7) the urinary and blood findings; (8) the change of liver dulness; (9) the picture of marked toxemia, and (10) the absence of the signs and manifestations of extensive peritonitis. Taylor,[7] in summing up a characteristic case, says that there should be (1) evidence of primary cause, that is, appendicitis; (2) the development of the septicemic state; (3) evidence that the liver is involved.

CASE ANALYSIS

In reviewing this case, several important facts present themselves for our consideration. We are dealing here, primarily, with a case of measles, which presented nothing unusual in its onset or course until the second day following the appearance of the eruption. On the evening of this day, it was noticed that the temperature rose without any apparent cause. On the following day there was slight abdominal pain, which was not sufficient to cause discomfort to the patient, other than the mentioning of the fact. With the onset of the definite lung involvement, the temperature immediately assumed a septic character. On careful examination for five days following this acute onset, during which time there was no complaint or clinical manifestation of septic involvement, the patient was as comfortable as is found in an ordinary case of measles. The only objective finding which gave any evidence that things were not right was the character of the temperature. On the ninth day, jaundice was present for the first time, as was also the rigidity over the liver area, and the pain over the appendix. This appendix pain was elicited only after careful and painstaking palpation, and was so overshadowed by the liver symptoms that the diagnosis of appendicitis was relegated to the background.

The case under discussion, in many details, did not fit the typical case as described. There were several of the cardinal diagnostic points lacking. Primarily there was nothing in the demeanor or actions of the boy to indicate an acute appendicitis. The one attack of abdominal pain, coming as it did at the height of a measles infection, and definite lung symptoms complicating such an infection, made the diagnosis very difficult from the start, as the accompanying chilly sensation was interpreted as incident to a beginning lung complication. It will be noted from the history that, at the time of the operation, no free pus was found in the peritoneal cavity, and that the tissues about the appendix were necrotic. It was not for some days that pus formed and began to discharge from the drainage tubes. In the cases reported, the portal involvement was later than in this case, and it is my opinion that the thrombosis of the mesenteric vein occurred in the first twenty-four hours of the appendiceal infection. The absence of leukocytosis was, in a way, an effect of the measles, since in this disease there is generally a leukopenia. The jaundice was the first localizing objective finding which led us to suspect the liver infection. It occurs in less than half of the cases, and may be quite slight, transient, or noted only late in the course of the disease, and can be explained as being due to the general toxemia. In forty-four cases tabulated by Langdon Brown, there was jaundice in nineteen. In four it was slight or transient, and in five it was an initial sign.

The temperature range presents some very interesting phases, having reached a height of 106.6 on one occasion following a chill. It was also noted that the chills came at irregular intervals, on some days there being as many as five. The temperature response following each chill varied from 106.6 to 103. The temperature in the interim went to subnormal and normal only twice during the twenty-four hours. At times the chilly sensations called forth as decided a temperature response as did a pronounced rigor. Neusser lays considerable stress on the frequency of the chills as a differential diagnostic point between suppurative pylephlebitis and purulent cholangeitis:

> At best the differential diagnosis may be extremely puzzling. In cholangeitis the individual attacks are frequently separated by afebrile intervals, and during these there is a more quiet pulse rate and relative euphoria. In pylephlebitis chills frequently recur several times a day, and the thermometer shows steep curves of abnormally high rise and subnormal fall. Furthermore, in pylephlebitis diarrhea becomes more prominent.

During the course of the disease in this case there were fifty-nine rigors, beside the chilly sensations mentioned above.

CONCLUSIONS

1. I am in hearty accord with the opinion that there is no medical treatment for appendicitis: that as soon as such a condition is diagnosed it is essentially surgical.

2. An infection of high virulence, even without pus, may extend to the veins draining the appendix within the first twenty-four hours.

3. Surgical interference, however thorough, will not save the patient when once the infection has reached the portal vein.

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6. Strümpell: Spezielle Pathologie und Therapie, F. C. W. Vogel, Leipzig, 1907, i, 734.
7. Taylor: Guy's Hosp. Rep., 1902.

The Workingman's Diet.—The workingman does not want proteid, leguminous food, milk, etc., to improve his vegetable diet; he wants simply meat, not because he needs it, but because it is for him a matter of pride to follow as best he can the other classes in his diet.—Mendel, Changes in the Food Supply and Their Relation to Nutrition.

DUSTY OCCUPATIONS *

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Even in the earlier medical works, the dust of certain occupations was held a causative factor in respiratory diseases. Until recently, however, investigations have been sporadic and more or less confined to the more definitely dusty trades. A study of these shows many, not usually so considered, to be dusty. Dr. W. Gilman Thompson says:

> Dusts may be sterile and simply mechanically irritating. They merely lacerate the bronchial mucosa. Infection may follow later. Dusts may be organic, as fur and hair, which convey germs; or, like flour dust, swelling and becoming sticky, they may choke respiratory passages without serious irritant or toxic properties.

To ascertain the danger of dust to workmen was the object of this investigation. The data were obtained from the records of patients examined and treated at the Cornell University Medical College Dispensary. The diseases investigated were those occurring in furriers, barbers, bakers, tobacco workers, marble workers, stone cutters and plasterers. The variation in the number of patients in the different occupations applying for treatment is due to the presence or absence of a large manufacturing plant in the vicinity of the clinic. To illustrate, the location of a large tobacco factory near the clinic is the reason for the 125 tobacco workers, while the absence of any large marble or stone cutting plant accounts for the small number of workmen, nineteen and thirty-seven, respectively, examined from these trades. There is probably very little difference in the home hygiene of the workers taken as a whole. Special attention was given to the prevalence of respiratory diseases.

FURRIERS

The fur trade has long been considered a hazardous occupation because of the occurrence of respiratory diseases among its workers. In 1915, the department of health of the city of New York made an investigation of the fur trade under Louis I. Harris,[1] who describes the process thus:

> The raw fur is first shaved so as to remove the dried and hardened fat and connective tissue that adhere to it; this is known as "fleshing fur." The skin is then treated with sawdust, salt, sand and water, to make it soft and pliable and to remove the natural grease; this process is spoken of as "dressing furs." The fur is subsequently dyed with various vegetable and chemical dyes. Principal among these are ursol colors (anilin products), logwood, turmeric, pyrolignite of iron, Sicilian sumac, nutgall, chlorate of potash, verdigris, chrome salts and peroxid of hydrogen. The dyed fur is now ready to be made up into garments. It is wet, cut, stretched and nailed to conform to various designs sketched on tables and allowed to remain so for a number of hours, the various pieces being then sewed together by machine and finished by hand, as in the case of cloth garments. To remove dust and loose hairs the fur is frequently beaten by hand in the workrooms, or, less often, in a closed compartment. Where the beating is done by hand, two long bamboo sticks are employed, with which the employee keeps up a constant tattoo on the fur garments.

At the clinic we had few workers at the hatters' fur trade, and they are not considered in the statistics. The factor of dust is present here too from the brushing of furs and the clipping and plucking of the long hairs, which are often thrown at the feet of the worker. The use of mercuric nitrate is a serious danger in this trade.

Of the sixty-nine furriers examined at the Cornell clinic, twenty-seven were born in Russia and twenty-four in Austria-Hungary. Sixty-three were male and six female. There were twenty workers 21 years of age or under; thirty-seven between 21 and 40, and twelve over 40 years old.

Of the various tracts attacked by disease, the respiratory was the most frequently involved, forty-two of the furriers having respiratory diseases; thirty of the patients had chronic, and twelve acute disease. There were nine patients with pulmonary tuberculosis, twelve with chronic bronchitis, ten with emphysema and two with bronchial asthma. Of the two bronchial asthma patients, one said his attacks were brought on as soon as he handled fur dyed with the anilin dyes, but he was not affected by the vegetable dyed furs. The marked frequency of respiratory disease stands out clearly in these figures. These certainly do not occur among the average individuals. A visit to the shops shows a marked prevalence of dust containing dirt and particles of fur; especially is this the case when beating, a process so often performed in the general workroom, is going on. The means of prevention of this state of affairs will be considered in the general discussion of the removal of dust.

BARBERS

The occupation of the barber is not ordinarily considered dusty; but it seemed rather common to have cough among the chief complaints of a barber. In his work there is produced a large quantity of short hairs. These are affected by gravity according to their weight, the lighter ones tending to circulate in the atmosphere at the slightest draft. Some find their way into the respiratory tract with inspiration. Other factors to be taken into consideration are the nationality, as the majority of the workers were Italians, and the indoor employment.

The number of barbers was 110. Of these, sixty-eight were Italians, eleven Americans and ten Germans. There were ten workers 21 years of age or under, forty-two from 21 to 40 years, and fifty-eight above 40.

There were forty-five patients with respiratory diseases, thirty-two having chronic and thirteen acute disease. Twelve barbers suffered from pulmonary tuberculosis, six from chronic bronchitis, seven from emphysema, four from chronic pharyngitis, two from bronchial asthma and nine from acute bronchitis.

We also found thirty-one patients afflicted with diseases of the alimentary tract, there being nine with constipation and thirteen with chronic gastritis. Although the dust cannot be blamed for this, the occupation is a factor in its cause through the long hours spent indoors on the feet. This produces fatigue, which disturbs normal alimentary action.

BAKERS

The baker's trade was long considered insanitary, but has been much improved by regulation. The chief hazards are exposure to excessive heat and dust consisting mostly of flour. From the statistics given, it

* From the Occupational Disease Clinic, Cornell University Medical College.

1. Harris, L. I.: Month. Bull., Dept. Health, City of New York, October, 1915.

still shows room for improvement. The introduction of machinery in bread making is eliminating considerable dust.

Of the 130 bakers examined in the Cornell clinic, sixty-seven were Germans and the remainder were of fifteen different nationalities. All were male. Twelve workers were 21 years or under, sixty-nine between 21 and 40 years, and forty-nine over 40 years of age.

Fifty-four of the 130 bakers presented signs of respiratory disease. Thirty-one patients had chronic, and twenty-three acute diseases. Eleven had pulmonary tuberculosis, seven chronic bronchitis, eleven emphysema, two chronic pharyngitis, one bronchial asthma, nine acute bronchitis, five acute pharyngitis and eight dry pleurisy.

A fact which should be noted is the occurrence of alimentary diseases in thirty-one patients. Seventeen had gastric disturbances, and thirteen were constipated. This is probably due to a free indulgence in their own wares and the psychic disgust in some cases due to odors arising from the baking.

There was also present the more or less constant use of alcohol in the form of beer and other beverages, there being three patients with alcoholic gastritis and one with cirrhosis of the liver.

TOBACCO WORKERS

In the manufacture of tobacco, cigars and cigarets, a certain amount of dust is produced. The tobacco part of this is both toxic and irritating. The amount

DISEASES IN DUSTY OCCUPATIONS

Patients	Furriers	Barbers	Bakers	Tobacco Workers	Marble Workers	Stone Cutters	Plasterers
Number examined	69	110	130	125	19	37	36
Male	63	110	130	89	19	37	36
Female	6	0	0	36	0	0	0
Number with:							
Respiratory diseases	42	45	54	38	8	12	13
Chronic	30	32	31	21	5	9	7
Acute	12	13	23	17	3	3	6
Pulmonary tuberculosis	9	12	11	11	3	3	3
Chronic bronchitis	12	6	7	4	0	1	3
Emphysema	10	7	11	3	2	3	2
Bronchial asthma	2	2	1	0	0	0	0
Chronic pharyngitis	0	4	2	1	0	1	0
Chronic rhinitis	0	0	0	1	0	0	0
Chalicosis	0	0	0	0	0	1	0
Bronchiectasis	0	0	1	0	0	0	0
Acute bronchitis	5	9	9	9	2	1	2
Acute rhinitis	0	1	1	0	0	0	0
Acute pharyngitis	4	1	5	6	0	1	1
Acute laryngitis	1	0	1	0	0	1	0
Pleurisy with effusion	0	1	1	1	0	0	0
Dry pleurisy	2	5	8	3	1	0	3
Percentage with:							
Respiratory diseases	60+	40+	41+	30+	42+	32+	36+
Pulmonary tuberculosis	13+	10+	8+	8+	15+	8+	8+

of dust varies with the occupation, being very slight in the manufacture of cigarets, which are made chiefly by machinery, except the filling, which is done by hand. Plenty of dust is present in the work of the strippers and tobacco handlers. In the manufacture of cigars, there are few moist leaves used. The factory room contains piles of dried leaves, especially for cigar fillers. Into this pile the hand of the worker is constantly reaching. The binder and wrapper are the only parts used in a moist condition.

The atmosphere in which the workers are compelled to labor contains fine particles of tobacco with its nicotin and volatile oil, and extraneous matter adherent to the tobacco and from other sources. The principal chemical constituents of tobacco are nicotin, nicotianin and volatile tobacco oil. These are poisons and irritants. Tobacco dust consists of the fine parts of the leaves, cilia and the hard woody parts.

Heucke, Schedban and Hesse made observations which proved the presence of considerable dust in the air of the workrooms taken at 3 meters from the floor for twenty-four hours.[2] This was found to be much higher than the figures obtained by Fodor as to the dust content above a city street. The sweepings of the tobacco rooms contained 73.32 per cent. sand and from 0.76 to 0.72 per cent. nicotin.

Of the 125 tobacco workers treated at the Cornell clinic, there were ninety-two cigar makers, nineteen cigaret makers and fourteen tobacco handlers. Thirty-six of the workers were female and eighty-nine male. Thirty-nine workers were born in the United States, twenty-two in Russia, twenty-seven in Austria-Hungary, fourteen in Italy, nine in Germany, and the remaining fourteen in England, Bohemia, Spain, Cuba, Greece, France and Roumania. Sixteen workers were 21 years of age or under, seventy between 21 and 40, and thirty-nine over 40. This shows the majority of workers to be young adults.

The occurrence of disease is most common in the respiratory tract, there being thirty-eight patients with these diseases. Of these, twenty-one had chronic, and seventeen acute affections. Eleven patients had pulmonary tuberculosis. Physical signs of chronic bronchitis were found in four, and emphysema in three patients. Acute bronchitis was present in nine workers and acute pharyngitis in six. One case of pleurisy with effusion should be mentioned, as it is so often followed by tuberculosis.

Thirty patients suffering from alimentary complaints cannot be passed over without comment. Chronic gastritis and constipation were the most common diseases. The principal factors here are impure air, tobacco and the lack of proper exercise, which are known to depress the appetite and disturb digestion. Perhaps the occupation is not entirely responsible, as the workers are often heavy tobacco consumers.

Under nervous diseases, the statistics show twenty-five patients. Among them we find ten patients with neurasthenia and five with headaches. The headache in one patient was classified as toxic.

There was one patient with acute nicotin poisoning, and one with tachycardia.

MARBLE WORKERS

The chief processes of marble work are those of cutting and polishing. Marble cutting may be done by hand with a mallet and chisel or with pneumatic tools. These tools stir up much dust, which is increased by the use of air pressure to keep the stone clean under the tool. The accumulated dust is also raised in cleaning up and moving the stones.

In polishing, slabs of marble are rubbed on beds of sand and chilled shot with a constant supply of water. Then the slabs are rubbed on an emery bed. Next a fine grained sandstone is used by hand. The final polish is given by buffing with a thick specially prepared felt on which a small amount of tin oxid is fed. The dusty part of this process is the handwork, and the stirring up of the dried dust produced.[3]

2. Stephani: The Diseases of the Tobacco Worker, in Weyl, Theodor: Handbuch der Arbeiter Krankheiten, translated by W. H. Coburn, Industrial Health Inspector, Nov. 15, 1913.
3. Day, W. C.: Report on Stone Industry for 1908.

Nineteen patients giving their occupation as marble workers were examined. The number of patients of each nationality was: Ireland seven, United States five, Italy two, and England, Austria, Canada, Scotland and Germany, one each. Three workers were 21 years and under, seven from 21 to 40, and nine over 40 years of age.

We find eight of the marble workers to be suffering from respiratory diseases, five chronic and three acute. Three patients had pulmonary tuberculosis, two emphysema, one dry pleurisy and two acute bronchitis.

STONE CUTTERS

Much of the stone cutting is outdoors or in large airy sheds. It consists of shaping, smoothing and cutting the stones into smaller pieces, as for paving blocks. Formerly much of the work was done by hand, but now pneumatic tools are used considerably. These produce a finer dust and tend to increase the hazard. It is held by some that the dangers are greater in sedimentary stones than the harder stones like granite, but no definite figures on this point could be obtained. Dust is also stirred up in sweeping and moving the stones about.

The number of stone cutters examined was thirty-seven. Fifteen were born in the United States, six in Ireland, four in Italy, two in Germany, Austria and England, and one each in France, Scotland, Bohemia, Hungary, Belgium and Armenia. As to ages, one was 21 years old, fifteen were from 21 to 40, and twenty-one over 40.

Twelve patients showed respiratory disease, nine being ill with chronic and three with acute diseases. Three workers had pulmonary tuberculosis, three emphysema, and one each chronic bronchitis, chronic pharyngitis, chalicosis, acute bronchitis, acute pharyngitis and acute laryngitis. Although only one case of chalicosis is recorded, a greater number would probably have been noted if other factors were studied as closely as physical signs.

PLASTERERS

In the work of the plasterer there is exposure to dust, cold and dampness. The source of the dust is from the plaster, which is usually composed of lime, sand and hair moistened. Any one at all familiar with the work of a plasterer knows what dust there is when the dried plaster is crumbled loose by walking, moving of objects and sweeping. The drafts of air through the open doors and windows fills the atmosphere with dust, and in this the worker has to breathe. There is some controversy among investigators as to the danger of lime to workers. Selkirk[4] was unable to find any instance of phthisis among them, nor could he learn of any worker in lime kilns having died of tuberculosis. That the figures for the rate of death due to consumption among the plasterers is considerably higher than that for registered males in the same district, however, is shown by the statistics compiled by F. L. Hoffman.[5]

The number of plasterers from which these statistics were obtained is thirty-six. Fifteen of these were born in the United States and ten in Ireland. One worker was 18 years of age, eighteen were from 21 to 40, and seventeen over 40 years of age.

4. Selkirk, E. J. B.: Tuberculosis in Limeworkers, Brit. Med. Jour., Nov. 14, 1908; abstr., THE JOURNAL A. M. A., Dec. 12, 1908, p. 2093.
5. Hoffman, F. L.: Mortality from Consumption in Dusty Trades, Bull. 79, Bureau of Labor Statistics.

The respiratory tract of the plasterers is chiefly affected as in the preceding trades, there being thirteen patients in this class. Seven patients had chronic and six acute respiratory disease. Three patients had pulmonary tuberculosis, three chronic bronchitis, two emphysema, two acute bronchitis, three dry pleurisy and one acute pharyngitis.

SUMMARY AND CONCLUSIONS

There are certain facts which stand out in the foregoing figures. Of the sixty-nine furriers, 13+ per cent. were ill of pulmonary tuberculosis. There were thirty with chronic respiratory diseases. Among the 110 barbers, thirty-two patients were found with chronic respiratory disease. Of the total number, 10+ per cent. were tuberculous. Of the 130 bakers, 8+ per cent. had pulmonary tuberculosis and thirty-one chronic respiratory diseases. Of the 125 tobacco workers, 8+ per cent. had pulmonary tuberculosis and twenty-one chronic respiratory disease. Among the marble workers three, or 15+ per cent., of the nineteen had pulmonary tuberculosis. Eight had respiratory disease. Of the thirty-seven stone cutters, 8+ per cent. showed signs of pulmonary tuberculosis. Nine had chronic respiratory diseases. In the records of the thirty-six plasterers, 8+ per cent. had pulmonary tuberculosis, and thirteen had respiratory disease.

In the trades investigated, we have examples of dust from an animal source (the furriers and barbers), from a vegetable (the bakers and tobacco workers), and from a mineral (the marble workers, stone cutters and plasterers). All the patients show a high percentage of tuberculosis and respiratory diseases irrespective of the character of the dust. This proves that it is dust which is the important factor. The dust prepares the lungs for the infective agent, and probably the exposure of the patient to the tubercle bacilli and other germs is not greater than that of the average workman.

Although some patients did not have their diagnosis of the pulmonary tuberculosis verified by positive sputum examinations, the physical signs in all were unquestionable. An error of diagnosis would affect only a fraction of 1 per cent. It is not the exact figures but the relative high rate that is important.

Admitting dust to be the important causative factor, we have a definite point of attack. By decreasing the amount of dust inspired, we can lessen the frequency of respiratory diseases.

Taking the trades investigated in order, let us see what can be done:

In the fur trade, one of the worst processes is beating. This should be done in a separate room with proper means of removing the dust from the atmosphere. Dust should not be allowed to accumulate, sweeping should be done after hours, preferably with dampened floors, or still better by use of the vacuum cleaner. Respirators should be worn wherever dust is prevalent.

Among the barbers, hairs should not be allowed to remain on the floors. Electric fans and currents of air should be so directed that the hairs will not be disturbed.

In the bakery, special care should be taken to avoid raising a dust. Where there is dust, proper protectors for the nose and mouth should be required.

The tobacco workers should not allow scrap to accumulate. Where it is absolutely necessary to work with the dried tobacco, suction fans and respirators

should be used. Sweeping should be done after work, and the floors should be dampened. Vacuum cleaners would be preferable.

In marble work, stone cutting and plastering, the fine material should be removed as soon as possible. Any procedure that stirs up unnecessary dust should be curtailed. Respirators are called for where dust is present and cannot be avoided.

Aside from the special features of each trade, there are certain general ones to be considered. There is the workman of the dusty trades. He must be instructed concerning the dangers of his occupation and how to avoid these. This can be accomplished through his union, and printed slips provided by the health department and distributed by his employer. He should be obliged to have a complete physical examination every six months. He should consult a physician whenever ill and not temporize or use "patent medicines." The importance of fresh air and cleanliness in his home should be impressed on him, as the insanitary condition of the tenement house is well known. Exercise should be encouraged in the sedentary trades, even if it only be a short walk in the open air.

The workroom should not be overcrowded, and should be clean and not littered by waste material. Light and ventilation should be provided. Hoods, fans, suction apparatus and vacuum cleaners should be installed. Where proper machinery will decrease the amount of dust produced, its use should be encouraged. Protective apparatus, as respirators, should be provided wherever necessary. This can be accomplished by sanitary regulations under the control of the department of health.

In conclusion, there are certain evident facts. The worker in dust from an animal, vegetable or mineral source shows a high percentage of respiratory disease. While his exposure to disease germs is not greater than that of workers in other trades, dust prepares his lungs to receive the infective agents. By diminishing the amount of dust, the occurrence of these diseases will be lessened. Thus we shall have decreased the suffering, expense and loss of time of the worker, and shall have increased his health, savings and efficiency.

664 West One Hundred and Seventy-Ninth Street.

STASIS OF VESICAL URINE

IN RELATION TO URINARY TRACT INFECTIONS*

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This communication is presented with a twofold purpose: (1) to draw attention to the danger of urinary tract infection from retained bladder urine, and (2) to discuss briefly several conditions in which retention is frequently encountered. Stasis of urine above the level of the bladder will not be considered.

THE CAUSE OF "CATHETER" CYSTITIS

There is an accepted belief that catheterization of the urethra is a chief cause of urinary tract infections, and that these frequently result despite employment of the most painstaking technic.

This belief I hold to be not truly in accord with actual conditions.

It has always been a surprising feature, to me, that the observance of rigid asepsis seemingly exerts only moderate influence in diminishing the number of such infections. Another curious fact is that patients catheterized by well-trained nurses suffer from cystitis, while urologists continue to pass catheters and cystoscopes with impunity.

Further, if gentle passage of a catheter results in cystitis, it is strange that normal bladders are so resistant to descending infection. In typhoid, with bacilluria in from 20 to 40 per cent., cystitis is rare. In pneumonia, in a series of twenty-five cases, Mathers[1] demonstrated a pneumococcus bacteriuria in twelve instances. In not one of these was there clinical evidence of cystitis. Moreover, Hartung[2] and others have brought forth evidence that there must be a certain predisposition before colon bacilli and other bacteria can cause infection of the bladder mucosa, and Rovsing[3] found that very great numbers of bacteria with high virulence are passed from the bladder two or three hours after injection without change in the mucous membrane.

To summarize: When cystitis develops after therapeutic catheterization, it occurs despite the utmost care. On the contrary, when catheterization is performed for conditions other than relief of retained urine, as in cystoscopic examination, subsequent infection is a rarity. Finally, both in disease and in experimental work, when virulent bacteria pass through the *normal* bladder, they tend not to cause change in the mucous membrane unless predisposing conditions facilitate infection.

I am convinced that a certain condition accounts for these cases of cystitis after catheterization, and that the catheter can be relieved of much of the responsibility. This most important factor I believe is *retention of urine*, and it is contaminated residual urine which is the trouble maker. The fact that nurses are especially called on to catheterize in cases of retention of urine accounts for infections being so much more frequent with them than with cystoscopists. I anticipate that not one of us can recall cystitis produced by careful catheterization of a healthy, *physiologically normal* bladder.

OBSERVATIONS ON THE OCCURRENCE OF RESIDUAL URINE

Throughout the past year, observations have been made on the amount of residual urine in women. The results show that under normal conditions the bladder empties itself almost completely. Those individuals who do not void thoroughly tend to develop bacteriuria, even though vesical symptoms are slight. Moreover, many cases of urinary tract infection, the source of which it has otherwise not been possible to fathom, have occurred in association with stasis of urine. During this time I have seen no case of catheter cystitis in the absence of residual urine.

Among the patients studied were several pregnant women with urinary tract infection. It is of interest to note that, in these bladders of pregnancy, a collection of residual urine was revealed to be a very common finding. Upward displacement of the bladder always occurs; often there is considerable distortion due to pressure, amounting at times to a virtual clamp-

* From the laboratory department and gynecologic service of St. Luke's Hospital.

1. Mathers: Personal communication to the author.
2. Hartung: Beitr. z. klin. Chir., 1914, xciii, 710.
3. Rovsing: Die Blasenentzündungen, ihre Aetiologie, Pathogenese und Behandlung, Berlin, Hirschwald, 1890.

ing of the bladder between the fetal head and abdominal wall. The importance of these mechanical conditions and the stasis resultant therefrom is not to be overlooked.

Disturbed evacuation of the bladder may be found in the early months and disappear later. Sometimes it comes on only with pressure of the greatly enlarged uterus of later pregnancy. Settling the fetus into the pelvis is then likely to bring relief.

In a patient illustrating this point, foul urine, much pus, and enormous numbers of colon bacilli were found for many weeks before labor. Retention was present. When the fetus settled more deeply into the pelvis, foul odor and pus disappeared at once. There was no longer retention.

In recent times it has been quite definitely shown that pyelitis of pregnancy is commonly an ascending infection. I would add to this the suggestion that retention of vesical urine is a factor of the utmost significance as a precursor of these ascending infections which cause pyelitis. This does not signify that pyelitis of pregnancy always goes hand in hand with vesical retention, but the latter condition is always a menace and is to be earnestly avoided. Its relative frequency and importance, as compared with retention due to ureteral obstruction, is worthy of study.

Mere mention suffices for some other types that are included under "urinary stasis cystitis," such, for instance, as retention with hypertrophied prostate, accumulation of urine in large-pouched cystoceles, etc. We should emphasize, however, that the amount of retention is often not proportionate to the size of the cystocele. In a patient with gradually acquired vesical distress, even the smallest pouching of the bladder is suggestive. Within the past two weeks I examined such a case, in which the bladder contained 200 c.c. of urine immediately after attempted thorough evacuation.

POSTOPERATIVE AND POSTPARTUM RETENTION

These conditions are worthy of close consideration. Cystitis is little to be feared after emergency passage of the catheter at labor, nor does it tend to result from catheterization in the operating room. The added factor of incomplete evacuation is needed to complete the chain. To cite an illustrative instance:

Eight months ago a highly nervous patient was subjected to vagino-abdominal hysterectomy for carcinoma of the uterus. Postoperative urinary retention necessitated catheterization for many days. After an otherwise normal course the patient left the hospital with a satisfactory result. Soon, however, there was noted moderate vesical distress. In the course of a month this became more annoying. Marked frequency developed. Thereafter, reasonable comfort was experienced only when recumbent. When the patient finally reported for examination there was found a retention of over 300 c.c. of foul urine, containing a pure growth of colon bacilli. Five days later there was retention of 100 c.c. A week later there were 50 c.c. The emptying power of the bladder thereafter became normal, and weekly examinations over a period of five weeks showed no retention. Infection and distress were relieved with return of normal bladder tonus and disappearance of the residual urine.

An unusual case is that of a patient of Dr. Croftan. This patient gives a history of operation three years ago for uterine fibroids. Vesical tenesmus was noted immediately after operation. Catheterization was thereafter repeatedly employed for relief, and eventually a cystocele operation was performed without alleviation of the intense distress. There was a further history of at least eight cystoscopic examinations, many with ureteral catheterization, with the common discovery of moderate diffuse colon bacillus cystitis associated with some trabeculation of the bladder. The persistence of trouble since operation, in the treatment of which rest, diet, antiseptics and vaccines had all been of no avail, forcibly suggested the likelihood of a mechanical factor at the bottom of the trouble. When tested for residual urine, 50 c.c. were obtained by catheter. The cystoscope revealed a cystitis, with a thickened, trabeculated bladder wall, and in addition a noteworthy vesical distortion. The entire bladder was pulled upward, and was of a modified funnel-shaped contour (more flattened in the roentgenogram). The walls appeared so fixed that evacuation was interfered with. Here again, we have to do with a case in which a mechanical factor appears responsible. It serves further to emphasize that *we require greater watchfulness of the mechanics of drainage of the urinary tract.*

CONCLUSIONS

1. Cystitis seldom results from cleanly and careful catheterization of a healthy, physiologically normal bladder.

2. Contamination of residual urine accounts for many otherwise inexplicable cases of urinary tract infection in women.

3. Residual vesical urine probably plays a considerable part in the development of pyelitis of pregnancy.

4. Postoperative and postpartum accumulations of residual urine greatly increase the dangers of urinary tract infections.

104 South Michigan Avenue.

ANATOMIC LESIONS IN LATE ACQUIRED SYPHILIS

A STUDY OF 314 CASES BASED ON THE ANALYSIS OF 4,880 NECROPSIES AT BELLEVUE HOSPITAL*

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There is an aphorism to the effect that to know syphilis is to know medicine, and the physician is adjured, when in doubt, to suspect syphilis, since the extension of the disease is colossal. For example, the Wassermann reaction in Bellevue Hospital has yielded strongly positive results in over 25 per cent. of the enormous number of serums examined. This, of course, does not imply that one in every four persons is syphilitic, although in many instances, the reaction was carried out as a routine measure and not necessarily because contamination was suspected. The figure quoted indicates, nevertheless, that syphilis is even more widely distributed than is generally believed, assuming, of course, that the Wassermann reaction, as carried out with the cholesterin antigen, does not justify the skepticism with which it is received in certain quarters. On the other hand, among 4,880 necropsies performed at Bellevue Hospital in the past ten years, anatomic confirmation of the existence of syphilis was found in only 314 cases, or in 6.5 per cent.

Any factor which serves to establish the existence of syphilis in the individual assumes importance to the community. Until recent years, the diagnosis of late syphilis depended on the willingness of the patient to admit contagion, or on the ability of the physician to

* From the Department of Pathology of Bellevue and Allied Hospitals.

recognize its obscure and often almost illegible legacies. As a result of the introduction of laboratory methods, not only has the avowal of the patient become a matter of frequently negligible consideration, but it is to be feared that these methods have been adopted at the expense of those signs, the recognition of which involves an intimate knowledge of the pathology of the disease.

During the past ten years I have had numerous occasions before or during the performance of necropsies to inquire of the attending physician or of the intern as to the existence of syphilis in the body under investigation. Formerly the reply almost invariably referred to the patient's denial or admission of infection — a notoriously unreliable guide, in which the contributing sources of error are not confined to the disposition of the average individual to falsify venereal history. Since the advent of the Wassermann test the answer has equally often involved the status of the patient in relation to that reaction. Seldom, however, has it been possible in my experience to elicit adequate information referable to physical changes in the later stages of acquired syphilis, sometimes in spite of the presence of definite and detectable lesions in the skin, visible mucous membranes, bony system, etc. There are circumstances in which such changes may have to be depended on entirely to determine the diagnosis of syphilis, as, for example, in those instances in which the patient's serum is not suitable for the Wassermann reaction and reactivation is impracticable, or in those numerous and highly regrettable cases in which the technic is faulty and the result misleading.

Experience of the sort indicated has prompted me to analyze the protocols of nearly 5,000 subjects coming to necropsy in Bellevue Hospital, with the object of determining the incidence, nature and distribution of the anatomic changes in acquired syphilis.

THE SKIN AND MUCOCUTANEOUS JUNCTIONS

The vast majority of all syphilitic subjects present cutaneous lesions in the secondary stage, but the eruption is frequently of such a nature that its complete disappearance is favored by evolution or by the influence of treatment. By far the larger numbers of syphilitic rashes are characterized by dilatation of the cutaneous vessels and by the transudation of small quantities of blood serum, and moderate infiltration of plasma cells. There is little, if any, tendency to sclerosis of connective tissue. Nevertheless, there are circumstances in which the secondary syphilid, with or without previous pustulation, undergoes cicatrization attended by atrophy of the surface epithelium, or by increase in the number or in the pigment of the chromatophores, producing scars which are pale, or present a pigmented periphery. The late stages of syphilis, on the contrary, are not uncommonly accompanied by ulcerative skin lesions, the healing of which produces extensive scarring.

In the Bellevue Hospital series of 314 cases of late acquired syphilis, lesions of the skin and mucocutaneous junctions were encountered 106 times, or in 33.4 per cent. Pretibial scars were present in forty-six cases. Of these, thirty-one were bilateral; eight were on the right shin and seven on the left. The scars were copper colored in four cases, pale and atrophic in twenty-two, and atrophic and pigmented in nineteen. Atrophic or pigmented scars were present in a more general distribution in sixteen instances. Thus, cutaneous scars, representing a legacy from the secondary rash, were present in 58.5 per cent. of the total number of mucocutaneous changes.

Other lesions of the skin and mucocutaneous junctions occurred in forty-four cases, as follows: rupia 17, vitiligo syphilitica 2, one of them being associated with symmetrical thickening and brownish discoloration of the hands — pellagroid syphilid; coppery rash of the face 3, papulosquamous syphilid of general distribution 2, papular syphilid of hands and forearm 1, anal condylomas 2, penile scars 17.

In short, the figure quoted indicates that late acquired syphilis is accompanied by residua of the secondary rash, or by other changes in the skin, in such a percentage of cases as to represent a diagnostic feature of great importance. Cutaneous lesions of the type indicated are frequently overlooked or misinterpreted, a statement which I venture on the basis of experiences at the necropsy table, where old syphilitic changes in the skin are not uncommonly pointed out for the first time.

THE LYMPHOID SYSTEM

Lymphoid hyperplasia is essentially an early manifestation of secondary syphilis and is marked by simple numerical increase in the lymphoid cells and in the cells of the sinuses. Enlargement of the superficial lymph nodes is but an expression of the general infection of syphilis, and bears no constant relationship to the severity of the disease. It is not infrequently marked in apparently mild syphilis, and of negligible intensity in syphilis with extensive clinical manifestations.

Hyperplasia of the lymphoid cells is by no means confined to the superficial nodes, but is shared by other lymphoid foci, notably the lingual tonsils and the spleen. Thus, in thirty subjects presenting typical manifestations of active secondary syphilis, 70 per cent. showed extensive hyperplasia of the lymphoid follicles at the base of the tongue (Symmers). In the same way, it is occasionally observed that the spleen is enlarged in secondary syphilis, and participation of the lymphoid follicles is not to be denied as a contributing factor.

Lymphoid hyperplasia in syphilis, however, is an ephemeral process, and unless it is succeeded by interstitial fibrosis, tends to disappear without any detectable residuum. It is not surprising to learn, therefore, that of the 314 cases of late acquired syphilis in the Bellevue Hospital series, only twenty, or 6 per cent., revealed hyperplastic changes in the lymph nodes. Of this number adenopathy was general in four, in two the axillary nodes were alone involved, in five cases the cervical and axillary nodes were enlarged in association with the inguinal, and in nine instances the inguinal nodes were alone involved. The significance of the latter fact is partially vitiated by the knowledge that inguinal adenopathy is common in healthy individuals.

THE OSSEOUS SYSTEM

Syphilitic lesions of the osseous system are too well known to merit discussion here beyond the statement that, in the Bellevue Hospital series, they were encountered forty-eight times, or in 14.9 per cent., and were distributed as follows: necrosis of the nasal bones 3, perforation of the nasal septum 1, perforation of the hard palate 1, chronic productive inflammatory lesions of the cranial bones 23. Of the latter, the frontal bone or its periosteum was alone involved 9 times, the

parietal 3, the frontal and temporal 2, the frontal and parietal 1, the occipital and frontal 1, the temporal 1, the sphenoid 1, and, in 5 cases, the calvarium as a whole was involved.

Chronic productive periostitis of the tibia occurred sixteen times, or in 34 per cent. of the total number of the osseous lesions.

Syphilitic changes were encountered in the metatarsal bones, the radius, humerus and first rib once each.

THE TESTICLE

There is a syphilitic lesion of the testicle characterized by slowly progressive hyperplastic changes in the connective tissue eventuating in complete or partial sclerosis of the organ, the so-called chronic interstitial orchitis. Among 171 male subjects of late acquired syphilis in the Bellevue Hospital series, chronic interstitial orchitis was found sixty-seven times, or in 39 per cent. Both testicles were involved forty times (23 per cent.), the left testicle was alone involved in eighteen (10.5 per cent.), and the right testicle in nine (5 per cent.).

In view of the fact that, in advanced cases, the testicle is greatly diminished in size and its consistence correspondingly increased, the lesion in question furnishes a sign of value in the clinical and anatomic diagnosis of syphilis.

In connection with the general subject of testicular syphilis, it is worthy of emphasis that in not one of the 314 cases of fatal acquired syphilis did we encounter gumma of the testicle proper. In one case a gumma was found in the epididymis, a reversal of the order usually quoted, since the epididymis, while frequently the point of commencement of testicular tuberculosis, is represented as enjoying relative immunity from syphilis. Nevertheless, textbooks frequently refer to gummas of the testicle as lesions of common occurrence, and not only susceptible of diagnosis and treatment, but of value as confirmatory of syphilis in other parts. This view, I believe, is exaggerated, and is the expression of an ancient error, the preservation of which is traceable to the fact that makers of textbooks too commonly adopt statements contained in earlier works. I do not recall having seen a gumma of the testicle in several thousand necropsies, and have but once encountered the lesion in specimens removed surgically. Dr. Charles Norris, although possessing great experience in pathologic work, tells me that he has seldom seen testicular gummas.

INDURATIVE ATROPHY OF THE BASE OF THE TONGUE

Pathologists have long recognized a syphilitic lesion of the base of the tongue characterized by obliteration of the normal surface markings and by smoothness and induration of the tissues in that vicinity, the so-called smooth or indurative atrophy of Virchow. The lesion is by no means rare, and is one of the most characteristic and valuable, and one of the most despised signs of late acquired syphilis. I have rarely encountered a clinician who was familiar with the lesion and who included it among the objective methods of determining the existence of syphilis. In the postmortem room, on the contrary, we are almost daily able to point out the change and to connect it with indubitable signs of syphilis in other parts.

In normal circumstances the base of the tongue presents, on either side of the median raphe, between the circumvallate papillae in front and the epiglottis behind, a dozen or more small, oval or rounded, nodular elevations representing lymphoid follicles. They frequently participate in the lymphoid hyperplasia of secondary syphilis, and as the disease progresses, tend to disappear and to be replaced by fibrous tissue, the base of the tongue becoming pale, flattened and indurated.

On the other hand, one often encounters simple smoothness and flattening of the base of the tongue in elderly or cachectic subjects in whom there is no reason to suspect syphilis, but in these individuals the essential feature of Virchow's smooth atrophy is lacking, namely, induration due to connective tissue replacement. Therefore, in approaching the diagnosis, both from the clinical and anatomic point of view, the finger should be trained to appreciate the degree of resistance offered by the base of the tongue, and the sense of sight used only as an adjunct to that of touch.

The incidence of indurative atrophy of the base of the tongue has not been definitely determined. For example, among 623 necropsies performed at the New York Hospital by Dr. Elser and myself, acquired syphilis was determined in seventy-five instances, and of this number sixty-four, or 85 per cent., presented the classical signs of indurative atrophy of the base of the tongue. On the other hand, among 4,880 necropsies performed by various individuals at Bellevue Hospital, the lesion was recognized in only 25 per cent. of 314 cases of late acquired syphilis. It so happens, however, that, in the New York Hospital necropsies, both Dr. Elser and myself were specifically interested in the investigation of syphilis of the tongue, and seldom, if ever, missed an opportunity to remove the organs of the mouth and throat in the routine performance of necropsies. At Bellevue Hospital, however, intramural conditions are such that postmortem investigation of the tongue is frequently denied, a fact which, taken in connection with the personal interest and experience of the pathologist, tends to explain the discrepancy. Lewin and Heller, in an analysis of 6,583 necropsies, found anatomic signs of syphilis in 200 subjects (3.4 per cent.), and, of these, indurative atrophy of the tongue was present in 71, or 35 per cent.

THE RESPIRATORY TRACT

In Conner's analysis of 128 cases of syphilis of the trachea and bronchi, gummas occurred in 15 per cent., ulcerative lesions in 39 per cent., endotracheal or bronchial scarring in 36 per cent., and fibrous peritracheitis in 6 per cent. In the ulcerative lesions, perforation of the tracheal or bronchial wall occurred in twelve instances, five of which were attended by erosion of blood vessels and fatal hemorrhage; in two cases the esophagus was perforated, and in three instances erosion of the tracheal wall resulted in intrathoracic abscess formation. In several of the cases, fragments of cartilage were coughed up from time to time. In thirteen of forty-seven cases of endotracheal fibrosis, the lumen of the tube was encroached on to such an extent as to occasion marked signs of irritation or suffocative attacks ending fatally. In eight cases of peritracheal fibrosis, one or both recurrent laryngeal nerves were involved in four instances.

In the Bellevue Hospital series of 314 cases of late syphilis, lesions of the respiratory tract occurred thirty-five times, or in 10.5 per cent. The larynx was involved in twelve, or 38 per cent. of the total number of lesions of the respiratory tract. Of the twelve cases of laryngeal syphilis, cicatricial lesions occurred five

times, ulcerative lesions five times, gummas once, and leukoplakia of the pyriform fossae and epiglottis, once. The figure quoted does not take cognizance of that considerable number of cases (seventeen in the Bellevue Hospital necropsies) in which the epiglottis was deformed in association with syphilitic indurative atrophy of the base of the tongue.

The lungs were involved in twelve cases (38 per cent.) in the form of a chronic productive interstitial pneumonia, in four of which bronchiectatic cavities were present. In addition, syphilitic pleural scars were encountered twice.

Ulcerative and cicatricial tracheal lesions were met with four times, and in one of these cases the deformity was of such a nature as to demand tracheotomy.

The nasal septum was perforated in four cases and the hard palate once.

THE NERVOUS SYSTEM

Lesions of the nervous system were encountered in 112 of the 314 Bellevue Hospital necropsies, or in 35.6 per cent. They were distributed as follows: chronic productive leptomeningitis 18, 2 of which were gummatous, granular ependymitis 23, chronic productive pachymeningitis 11, encephalomalacia 15, endarteritis obliterans 27, in 7 of which miliary aneurysm was associated, gummas of the brain substance 8, tabes dorsalis 4, paresis 4, gliosis of the cervical cord 2.

SYPHILIS OF THE LIVER

The tendency of syphilis is to pursue a course marked by inflammatory changes resulting in overproduction of connective tissue. In no organ is the inimical effect more pronounced than in the liver, in which sclerotic changes are frequently traceable to syphilis. In the Bellevue Hospital series, syphilis of the liver occurred 105 times (33.4 per cent.).

In atrophic cirrhosis of the liver the cause most commonly invoked is, of course, alcohol. Of nearly 300 examples of so-called alcoholic cirrhosis encountered at necropsy at Bellevue Hospital in the past ten years, concomitant anatomic changes attributable to syphilis occurred in only a negligible number. Nevertheless, in about 80 per cent. of all recent cases diagnosed clinically as atrophic cirrhosis of the liver, the Wassermann reaction was positive, and in a number of these cases the diagnosis was confirmed by postmortem examination. This fact, taken in connection with the known tendency of syphilis to produce sclerosis of connective tissue, and the peculiar susceptibility of the liver, would seem to indicate that syphilis is a more powerful factor in the production of atrophic cirrhosis than is generally recognized.

On the other hand, there is a variety of cirrhosis of the liver in which acquired syphilis is conceded as the specific cause, namely, the so-called hepar lobatum. In this form of cirrhosis, the liver is the seat of scars which are often deep and numerous and which are distributed in such an irregular manner as to divide the organ into lobes of variable size, the surface of the lobulated masses retaining, as a rule, the accustomed smoothness of the liver. In a considerable proportion of cases, the production of scars is due to the healing of gummas. In other circumstances the gnarled condition of the organ seems to represent an expression of the syphilitic tendency to cause sclerosis without the intervention of focal granulomas.

HEPAR LOBATUM

In 4,880 necropsies and 314 cases of fatal syphilis, there were fifty cases of hepar lobatum (16 per cent.).

Grouped in decades the ages were as follows:

Age	Number of cases	Percentage
20-30	12	24
31-40	13	26
41-50	11	22
51-60	9	18
61-70	1	2
Not given	4	8

Between 20 and 50 years of age there were thirty-six cases (72 per cent.). The lesion, therefore, is one of youth, or of comparative youth.

Sex and Color: The lesion occurred thirty-seven times in whites and thirteen times in negroes, thirty-one times in males and nineteen times in females. Considering the admission ratio of white to colored patients in Bellevue Hospital, the figures quoted indicate a relatively strong representation of negroes and, on the same basis, the disease would seem to be rather common among females.

Associated Syphilitic Lesions: In twenty-five of the fifty cases of hepar lobatum syphilitic changes were recognizable in the skin, visible mucous membranes, osseous system, etc. Pretibial scarring occurred twelve times, indurative atrophy of the base of the tongue nine times, lesions of the bony system ten times, lymph node adenopathy three times, eye lesions twice, penile scarring once and syphilitic cutaneous ulcers once.

Liver: In thirty-five cases (70 per cent.) the liver was coarsely nodular, and, of these, the edge of the organ projected beneath the costal margin in twelve (34 per cent.), twice reaching as low as the level of the umbilicus. In twenty-two cases the average weight of the liver was 1,596 gm., which approximates the normal. In two cases the liver was the seat of amyloid deposits. In other words, the anatomic lesions and the size and position of the liver indicate that the organ invited palpation during life.

Spleen: In thirty-two cases the spleen was enlarged. Of this number, the organ was described as "enlarged," "considerably enlarged," or "very large," in fifteen instances. In seventeen cases the extreme weight of the normal spleen, namely, 200 gm., was greatly exceeded, as shown by the following figures: 730, 440, 460, 275, 750, 980, 500, 420, 540, 800, 530, 620, 600, 300, 840, 630 and 1,340 gm. The average weight of the spleen in seventeen cases of syphilitic cirrhosis of the liver was, therefore, 634 gm., or 434 gm. in excess of the extreme normal limit. On the other hand, in seventeen unselected cases of Laennec's, cirrhosis of the liver in nonsyphilitic subjects, the average weight of the spleen exceeded the extreme normal by only 112 gm.

In twenty-one cases the spleen was in the condition of chronic interstitial splenitis, in three instances it was the seat of amyloid deposits, and on eight occasions its consistence was not recorded.

Icterus: In seven instances the conjunctivae were icteric, in six cases the conjunctivae and skin of the face were slightly jaundiced, and in one case there was moderate general jaundice. Jaundice was present, therefore, in fourteen cases, or in 28 per cent. of the total number of cases of hepar lobatum.

Ascites: Ascites was present in eleven cases, or 22 per cent.

Varices: Esophageal varices were detected four times. In one case, the anatomic condition of the varices indicated that recent rupture and hemorrhage had ensued. Superficial enlargement of the abdominal veins occurred twice and peritoneal varices once.

From the foregoing facts it is evident that considerable numbers of cases of hepar lobatum present anatomic changes which might be determined during life. In my postmortem experience I have yet to encounter a case of hepar lobatum in which the diagnosis was made, and but once was the condition suspected during life. On the other hand, I know of two cases in New York in which the clinical diagnosis of Banti's disease was followed by surgical removal of the spleen, and in both instances necropsy revealed the gnarled liver of syphilis.

The incidence of hepar lobatum in acquired syphilis is such as to warrant the search for its existence in every patient who comes under observation in the late or comparatively late days of specific infection. The history of syphilis, and the occurrence of a positive Wassermann reaction are, of course, important, but the determination of visible or palpable evidences of syphilis in the skin or visible mucous membranes, the lymph nodes, bony system, etc., or the presence of slight jaundice of the conjunctivae or skin associated with an enlarged, firm spleen, with or without ascites, should direct the attention of the clinician to the liver, especially since the determination of the disease in the living patient is of extreme importance from the standpoint of treatment. There are reasons for believing that the disease sometimes undergoes spontaneous improvement, and that active antisyphilitic treatment might, in certain cases at least, prove beneficial.

Gummas of the Liver: Gummas of the liver may occur singly, but in the great majority of cases they are multiple and lie immediately under the capsule in the form of nodular projections of variable size and consistence, or are found buried in the substance of the organ. The superior surface of the liver is the site of predilection, consequently the diagnosis is sometimes practicable.

In 314 cases of fatal syphilis in the Bellevue Hospital necropsies, gummas were encountered in various localities in sixty-seven instances. Of this number, the liver was involved thirty-five times, or in 52.2 per cent. of the total number of gummas.

Syphilitic scars in the surface of the liver were found twenty-seven times (8.6 per cent.) and amyloid disease five times.

SYPHILITIC AORTITIS, AORTIC VALVULITIS, ANEURYSM

Of the 314 cases of fatal acquired syphilis, there were 175 cases of aortitis (55.7 per cent.), a figure noticeably above that of any other individual lesion. Of the 175 cases, the arch of the aorta was involved 109 times, or in 63 per cent., and in forty-two cases the entire vessel was diseased. Combined lesions were encountered twenty-nine times (16 per cent.). Of these the combination of syphilitic aortitis of the arch and upper thoracic aorta was the most frequent, and occurred fifteen times. The combination of thoracic and abdominal aortitis was present three times, and the arch and lower thoracic aorta, the ascending and lower abdominal aorta, the thoracic and abdominal aortas, and the entire arch and the thoracic aorta shared in the process once each.

Aneurysmal Dilatation and Aneurysm: Aneurysmal dilatation of the aorta occurred thirty-nine times (22.3 per cent.). In thirty-five instances the arch was alone dilated, in three cases the aorta was dilated throughout its entire extent, and in one case the arch and thoracic aorta shared the dilatation.

Genuine aneurysm of the aorta was present forty-five times, or in 25.6 per cent. of the total number of cases of syphilitic aortitis. Of these, the arch was alone involved thirty-four times (75.5 per cent.), the thoracic aorta was concerned six times, the abdominal aorta four times, and in one case saccular aneurysms to the number of eight were scattered throughout the vessel.

The Aortic Valves: The aortic valves were sclerotic in sixty-four instances, or in 36.6 per cent. of the total number of cases of syphilitic aortitis. Of this number, the valves were definitely retracted in twenty-seven subjects, or in 42.2 per cent., and it is reasonably to be assumed that the efficiency of the ring was impaired. This figure is in close agreement with that of Longcope, for example, who, in forty-three cases of aortic insufficiency with symptoms, found an associated syphilitic aortitis in eighteen, or in 41.8 per cent.

In fifty-one of the 175 cases of syphilitic aortitis (28.9 per cent.), the lesion in the aorta was the sole detectable anatomic manifestation of syphilis. In the remaining 124 cases (71.1 per cent.), syphilitic aortitis was associated with one or more definite syphilitic changes beyond the vascular system. Skin changes occurred 34 times, indurative atrophy of the base of the tongue 28 times, penile scars 10 times, chronic interstitial orchitis 40 times, lymph node enlargement 15 times, iritis once, lesions of the upper respiratory tract twice, changes in the bony system 10 times, and in the nervous system 20 times, hepar lobatum 21 times, syphilitic scars in the liver 17 times, and in the kidneys 9 times, and gummas in various localities 26 times. Thus it is apparent that visible or palpable syphilitic changes outside the vascular system accompany syphilitic aortitis in a considerable percentage of cases.

Syphilitic aortitis frequently is associated with companion lesions in other vessels. One of the most important in this connection is to be found in the coronary arteries, involvement of which was recorded forty-five times, or in 26 per cent. Both coronaries were sclerotic in twenty-seven cases, the anterior was alone involved seven times, and the posterior once. In ten cases, one of the coronary arteries was completely occluded, and of these the anterior and posterior were each involved five times. From this it would appear that the association of coronary sclerosis in syphilitic aortitis is to be invoked as an important, if not the most important, determining factor in the production of the anginal pains by which the disease is so often accompanied.

In a single instance the anterior coronary artery was the seat of a miliary aneurysm.

In twenty of the 175 cases of syphilitic aortitis there were associated changes in the smaller cerebral arteries — syphilitic endarteritis obliterans — and in seven of them miliary aneurysm was present.

STOMACH AND INTESTINE

There is a noticeable tendency to regard syphilis of the stomach as the anatomic basis for certain gastric disorders, among them symptoms clinically indistinguishable from ulcer. In eight cases reported by Downes and Le Wald, the diagnosis of gastric syphilis was based largely on a positive Wassermann reaction,

on Roentgen-ray examination of the stomach with the discovery of deformities interpreted as syphilitic, and on improvement after operation, or under antisyphilitic treatment. In three of their cases, tissues removed at operation and examined histologically revealed granulomatous changes indicative of syphilis or tuberculosis, but in no instance did the pathologist commit himself to a positive opinion.

In the Bellevue Hospital series, gastric ulcer of indubitable syphilitic origin occurred once only. The patient was a white man, aged 32, who died from profuse hematemesis. Necropsy revealed the coarsely lobulated liver of syphilis, together with multiple gummas of the liver, and of the mesenteric, pancreatic and perigastric lymph nodes, syphilitic aortitis, and extensive ulcerative lesions of the stomach presenting the characteristic histologic features of syphilis — chronic productive inflammatory changes attended by miliary gummas, endarteritis obliterans, and circumvascular plasma and round cell infiltration. Pappenheimer and Woodruff, who studied the lesion, were able to find but twelve other acceptable examples of syphilitic gastric ulcer in the literature. My own experience in the histologic examination of gastric ulcers removed at necropsy and operation has not included a single other example of syphilis, and, unless the diagnosis of gastric syphilis is confirmed by microscopic examination, I should not be inclined to accept it.

In six subjects in the Bellevue Hospital series, syphilitic lesions of the intestine were present. Ulcerative lesions of the cecum occurred once, and ulcerative and stenotic lesions of the colon five times. In one case, the splenic flexure and the descending colon 6 cm. below were ulcerated and stenosed, and in the remaining four cases there were stenotic lesions in the rectum.

In the Bellevue Hospital series, therefore, syphilitic lesions of the stomach and intestines in late acquired syphilis occurred seven times, or in 2.2 per cent.

GUMMAS

In the Bellevue Hospital series, gummas occurred sixty-five times (20.7 per cent.). They were distributed as follows: liver 35 (or in 50.4 per cent. of the total number), spleen 8, brain 8, heart 4, kidney 4, larynx 2, muscles 2, lymph nodes 1, epididymis 1.

SUMMARY

1. In 4,880 necropsies, anatomic lesions of syphilis occurred in 314 subjects, or in 6.5 per cent.

2. Lesions of the skin and mucocutaneous junctions occurred in 106 subjects, or in 33.4 per cent. Of this number, atrophic pigmented scars of the skin, particularly that of the pretibial region, were encountered sixty-two times. Rupia occurred seventeen times, penile scars seventeen times, and condylomata lata and other syphilids ten times.

3. Enlargement of the superficial lymph nodes occurred in but 6 per cent. of the cases.

4. Lesions of the osseous system occurred forty-eight times, or in 14.9 per cent. of the cases. Chronic productive inflammatory lesions of the cranial bones were met with in twenty-three cases, and similar lesions of the tibia in sixteen.

5. Chronic interstitial orchitis occurred sixty-seven times, or in 39 per cent. of the total number of male subjects. Both testicles were involved forty times, the left eighteen, and the right nine times. Not a single instance of gumma of the testicle was found.

6. Indurative atrophy of the base of the tongue occurred in 25 per cent. of the Bellevue Hospital cases.

7. Syphilitic changes in the respiratory tract were encountered thirty-five times, or in 10.5 per cent. The larynx was involved twelve times, there were twelve instances of chronic interstitial syphilitic pneumonia, four of which were associated with bronchiectasis, ulcerative and cicatricial changes in the trachea were observed in four cases, one of them demanding tracheotomy during life, the nasal septum was perforated four times, and the hard palate once.

8. Lesions of the nervous system occurred in 112 cases, or in 35.6 per cent.

9. Syphilis of the liver was detected in 105 cases, or in 33.4 per cent. There were fifty cases of hepar lobatum, twelve of which were associated with hepatic gummas; twenty-three instances of solitary or multiple gummas without appreciable sclerotic changes in the stroma, twenty-seven syphilitic capsular scars, and five cases of simple amyloidosis of syphilitic origin.

10. Syphilitic aortitis occurred 175 times, or in 55.7 per cent. of the total number of syphilitic subjects.

(*a*) The arch was alone involved in 63 per cent.

(*b*) Dilatation of the aorta was present in 22.3 per cent.

(*c*) Aneurysm was encountered in forty-five cases, or in 25.6 per cent., and of these, the arch was involved thirty-four times, or in 75.5 per cent. of the total number.

(*d*) The aortic valves were sclerotic in sixty-four cases, and were definitely retracted in twenty-seven, or 42.2 per cent.

(*e*) In 71.1 per cent. of the 175 cases of syphilitic aortitis there were associated syphilitic changes beyond the vascular system, many of them being in the skin and visible mucous membranes.

(*f*) The coronary arteries were sclerotic in 26 per cent.

11. Lesions of the stomach and intestine occurred seven times, or in 2.2 per cent. There was one instance of genuine syphilitic ulcer of the stomach.

12. Gummas were encountered in sixty-five cases, and of these, the liver was involved in thirty-five, or in 50.4 per cent. of the total number.

338 East Twenty-Sixth Street.

Equanimity.—Mental fortitude, incumbent on all, is especially so in the case of the medical practitioner—not alone for his own sake, in order to preserve the temperamental balance, but also for the benefit of his patients. In cases of continued illness, it is the anxiety arising from physical incapacity, even more than actual suffering, which causes the patient such acute distress: he looks to the medical adviser not merely for bodily alleviation, but in addition for intellectual support, and it is the combination of both lines of treatment which result in recovery. But let the sick man come to realize that the doctor's mind is as fluctuant and unstable as his own; that the same waves of peevishness and depression visit him; that his moral grip is equally spasmodic; and at once his own confidence is irretrievably lost. Rightly or wrongly, we think that the sphere of medicine is steadily widening to embrace eventually a domain up to the present dominated by philosophy—if dominated by any positive factor at all; and that, such being its future scope, none but those possessed of the rare capacity to see life steadily and see it whole can expect to be of utility therein. The ill-defined minor mental instability will, we believe, prove to be a malady of increasing importance—to be combated not by drugs, but by the too-often sneered-at therapy of Arnold—sweetness and light.—*Med. Press and Cir.*, 1916, p. 163.

THE PRACTICAL APPRECIATION OF EMOTIONAL GLUCOSURIA

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LOS ANGELES

In 1911, Cannon, Shohl and Wright[1] demonstrated that a glucosuria was produced in animals as the result of emotional excitement which takes the form of pain, fear or rage. These results have since been confirmed by the work of Scott,[2] Rolly and Oppermann,[3] Jacobson[4] and others.

That emotional excitement in man also tends to a glucosuria, at times permanent, at times transitory, is evidenced from the clinical reports of Kleen,[5] Naunyn[6] and others.

Such pathologic conditions as mania or mental disturbances are also often accompanied by presence of sugar in the urine, as reported by Schultze.[7] He considers that the evidence supports the view that the amount of sugar eliminated is somehow connected with the degree of depression, and is also increased with the fear-psychoses. Raimann[8] and also Mita[9] have added to this fund of clinical evidence the fact that melancholia is very often accompanied by glucosuria. The most detailed study was made by Folin and Denis[10] on the inmates of an institution for the insane. They found that 12 per cent. of the 192 subjects under investigation had glucosuria. In addition, Arndt[11] studied several cases of delirium induced by alcohol and noted the development of glucosuria with the progress of the mental incoordination.

It is, accordingly, obvious that disturbance of psychic entity is often accompanied by the presence of sugar in the urine, and the so-called "sugar-center" of Bernard is thus intimately connected with the higher centers of thought and imagination.

The question now is, Does ordinary disturbance of mental equilibrium, such as is aroused in every person by various external circumstances, tend toward the production of a glucosuria?

There is ample evidence that relatively normal causes of emotional excitement may lead to an excretion of sugar in the urine. Smillie,[12] working with medical students undergoing written examination, found that four out of nine developed a glucosuria as the result of a hard examination, while but one of the nine did this after an easy examination. Fiske and Cannon[13] found glucosuria development in twelve out of twenty-five members of a football squad after an important contest, five of whom were substitutes, not participants. The urine of the only spectator examined contained sugar. Folin, Denis and Smillie,[10] investigating the effects of examinations on students, found that six out of thirty-three medical students, or 18 per cent., developed glucosuria as the result of the examination, and that six out of thirty-six women students, or 17 per cent., showed a similar facility for excreting sugar as the result of mental strain.

In order to extend and confirm these results, I carried out, with the assistance of one of my students, Mr. E. E. Kessler, and the instructor in physiology, Mr. J. Larson, a series of experiments wherein the exciting stimuli were purely emotional in character but of different types.

The first type of stimulus was the effect of participation in a decisive football game. It was found that nine out of the seventeen subjects examined, or 53 per cent., developed a glucosuria.

The second type of disturbance was the effect of watching the game with potentiality of participation. Six of the seven substitutes examined, or 85 per cent., developed glucosuria.

The third type of excitement was observation of the game with disinterestedness as to participation. Six of the thirteen spectators, or 46 per cent., had developed a glucosuria.

The fourth and last type of stimulus studied was a short but difficult written examination given to first year medical students. Eleven of the twenty-seven urines examined, or 43 per cent., showed the presence of sugar after the test.

These results are much higher than those obtained by the workers previously quoted. Every subject reported on in our experiments failed to show the presence of sugar in the urine before the experiments.

The cumulative evidence herein cited denotes conclusively that emotional excitation of widely varying types tends toward a production of glucosuria. May it not be true that the thorough physical examination of patients, which to the physician is a routine, may be and often is an ordeal to the patient, and that as the result of the mental condition thus aroused, either through fear or anxiety, a glucosuria may develop, thus leading to a diagnosis of a condition which does not exist? That this occurs in many instances I sincerely believe. Accordingly, physicians in general should recognize this potential condition, and not rely on positive sugar tests found in urines obtained following such examination, but should obtain a sample of urine at some later date when excitation, due to changed and unaccustomed procedure, has had opportunity to die down and disappear.

The practical point now in evidence is to determine the extent of this emotional glucosuria as to the time factor. Is it of brief or long duration, and how soon after excitation does it disappear? To determine this point, we examined the urines of the eleven students who had developed glucosuria as the result of the examination, four hours after the excitation, and found that at this time only one of the eleven still showed the presence of reducing sugar. In this case the relative amount was considerably diminished.

From the latter work, it is demonstrated that emotional glucosuria is but transitory in nature and soon disappears after removal of the exciting cause, bearing out in full the foregoing contention.

1. Cannon, Shohl and Wright: Cited from Cannon: Bodily Changes in Pain, Fear, Hunger and Rage, 1915, p. 70.
2. Scott: Am. Jour. Physiol., 1914, xxxiv, 283.
3. Rolly and Oppermann: Biochem. Ztschr., 1913, xlix, 201.
4. Jacobson: Biochem. Ztschr., 1913, li, 449.
5. Kleen: On Diabetes Mellitus and Glycosuria, Philadelphia, 1900, pp. 22, 37.
6. Naunyn: Der Diabetes Mellitus, Vienna, 1898, pp. 72, 73.
7. Schultze: Verhandl. d. Ges. deutsch. Naturforsch. und Aerzte, 1908, ii, 358.
8. Raimann: Ztschr. f. Nervenh., 1902, xxiii, Abt. iii, 14, 19.
9. Mita: Monatschr. f. Psychiat. u. Neurol., 1912, xxxii, 159.
10. Folin, Denis and Smillie: Jour. Biol. Chem., 1914, xvii, 519.
11. Arndt: Ztschr. f. Nervenh., 1897, x, 436.
12. Smillie: Compare Footnote 1, p. 75.
13. Fiske and Cannon: Compare Footnote 1, p. 75.

High Tuberculosis Mortality Among Negroes.—Following is the number of deaths and the death rate, from tuberculosis, for the white and for the negro races, respectively, in New York City for the year 1915. White race: pulmonary tuberculosis: deaths, 8,279; rate, 1.54; tuberculosis, all forms: deaths, 9,595; rate, 1.79; all causes: deaths, 73,512; rate, 13.71. Colored race: pulmonary tuberculosis: deaths, 546; rate, 5.20; tuberculosis, all forms: deaths, 654; rate, 6.23; all causes: deaths, 2,681; rate, 25.53.—*Bull. N. Y. Dept. of Health.*

Therapeutics

SHOCK

The term "shock" is applied to a definite clinical picture with characteristic symptoms resulting from a number of different conditions. The symptoms may vary in their intensity and in their duration. With a correct knowledge of shock, treatment based on exact facts should be more rational. Unfortunately, there is still some difference of opinion as to the physiologic and pathologic changes that occur during shock, and the many kinds of treatment reported make the therapy confusing.

What is usually meant by shock is a condition in which there is mental apathy, extreme weakness, a small, rapid and thready pulse, subnormal temperature, pallor, diminished sensibility and irregular respiration. It is encountered in cases following extensive burns, severe injuries, perforation of ulcers, in acute pancreatitis, sepsis, hemorrhage, and during a prolonged abdominal operation in which there has been considerable handling of the viscera. Sometimes it has followed after severe athletic exertion or deep emotion. It is also seen in anaphylaxis. The term "shock" is often confused with "collapse." Crile states that in shock the onset is gradual, whereas in collapse it is sudden. Collapse is more amenable to treatment.

Various theories have been advanced as to the nature of shock. It has been attributed to cardiac or respiratory failure or exhaustion, to disturbances due to hemorrhage or vasomotor changes, to suprarenal deficiency, and to exhaustion of the cortical cells. Of these there stands forth Crile's[1] kinetic theory of surgical shock, the acapnia theory of Henderson,[2] and more recently suprarenal exhaustion, described by Corbett.[3] Seelig and Joseph[4] believe their experiments show that "a paralysis or failure of the vasomotor center is not the *primary* cause of the other symptoms of surgical shock."

SHOCK DUE TO ACAPNIA, AND TREATMENT

According to Henderson, shock is due to a loss of carbon dioxid from the system by way of the blood and tissues. The carbon dioxid escapes when the abdomen is opened, or during exposure in a long operation. On this theory experimental shock has been produced and an attempt made to restore normal conditions by injections directly into the blood stream of carbon dioxid or a carbonate.

Seelig, Tierney and Rodenbaugh[5] report good results by the intravenous injection of sodium bicarbonate. They state that there are three elements in the blood which tend to break up sodium bicarbonate, resulting in the liberation of small amounts of carbon dioxid. These are hemoglobin, serum albumin and the acid sodium phosphate of the blood.

They inject "25 c.c. of a molecular solution of sodium bicarbonate." This results in an increase in the blood pressure, which follows immediately after the beginning of the injection of the solution and is kept up for a long period. They find no increase in the heart beats, but a marked increase in the amplitude of the beats. The effects on the respiration are not constant. They explain the action of sodium bicarbonate by assuming that it exerts a specific action on heart muscle.

THE KINETIC THEORY OF ANOCIASSOCIATION

Crile bases his kinetic theory on a study of the phylogenetic history of the whole motor mechanism. He found that animals whose self preservation was dependent on some form of motor activity were more readily susceptible to shock. This motor activity is normally excited by stimulation of nerve endings. When there is no motor response to such stimulation, the energy is expended on the cortical cells. Repeated stimulation without motor response causes an exhaustion of the cortical cells. Operations on the brain and lung do not as a rule result in shock, for these are not normally exposed organs. According to Crile, all energy must receive an adequate response. This cannot occur in the unconscious patient, and the energy is expended on some part of the body, usually the cortical centers. Microscopic examination has shown that there are morphologic changes in the brain after repeated stimulation of some normally exposed part of the body when there has been no response. Inhalation anesthesia is not sufficient to prevent stimuli reaching the brain. Besides the general anesthesia, there must be interference along the path that the stimuli traverse. This can be produced by the use of local anesthesia which will block the nerve path.

From the foregoing investigations, Crile has evolved his method of the prevention of shock through anociassociation, or the prevention of nocuous or harmful associations or stimuli from reaching the brain. For general anesthesia he uses nitrous oxid. This anesthetic should be given only by a skilled anesthetist. One hour before operation the patients, excepting infants, the aged, and those with depressed vitality, are given $\frac{1}{6}$ grain of morphin and $\frac{1}{150}$ grain scopolamin. The nitrous oxid may be given with ether.

If only local anesthesia is to be used, novocain 1:400 solution is administered by infiltration. With general anesthesia, after the patient has been anesthetized, the line of incision is first infiltrated with 1:400 novocain solution. The skin is infiltrated, and then the subcutaneous tissue, the solution in the infiltrated area being spread by pressure with the hand. After this is done, in abdominal operations, the incision is made to the peritoneum, which is also infiltrated with novocain and then it is incised. It is everted and infiltrated with 0.5 per cent. solution of quinin and urea hydrochlorid. This serves as a block, and may last for several days. By this method there is offered a relaxed abdominal wall, and easy exploration is afforded.

In exophthalmic goiter a somewhat different procedure has been adopted. Prevention is also aimed against any unnecessary fear that may be a factor in the production of shock. This is done by giving fictitious anesthesia for several days prior to the operation. The patient becomes accustomed to the odor of ether. When the patient has become accustomed to the procedure, she is, without her knowledge, anesthetized, and there is made the usual infiltration with novocain solution. Crile reports excellent results with the anociassociation method. In 1,000 consecutive operations the mortality was only 0.8 per cent.

1. Crile, G. W.: Interstate Med. Jour., June, 1913, p. 499.
2. Henderson: Am. Jour. Physiol., 1908, xxi, 126; 1909, xxiii, 345; 1909, xxiv, 66; xxv, 385; xxvi, 360.
3. Corbett, J. F.: The Suprarenal Gland in Shock, THE JOURNAL A. M. A., July 31, 1915, p. 380.
4. Seelig and Joseph: Jour. Lab. and Clin. Med., February, 1916.
5. Seelig, Tierney and Rodenbaugh: Am. Jour. Med. Sc., August, 1913, p. 195.

SUPRARENAL EXHAUSTION THEORY

Corbett[5] explains shock in an interesting way. He assumes that shock is due to primary suprarenal exhaustion. He bases his conclusions on experimental evidence obtained from animals, and deductions based on the experimental work of others. The epinephrin content of the blood in animals was determined during various forms of anesthesia maintained for varying intervals. Peritoneal trauma was also produced and the epinephrin content of the blood determined. He states that a picture similar to shock is produced in animals which have been suprarenalectomized. He does not think that artificially administered epinephrin solves the problem, because normally it is present in the blood in only small amounts, and in order to maintain normal blood pressure during shock, increasing amounts of epinephrin must be injected.

TREATMENT OF SHOCK

Hogan[6] has had considerable success in treating shock, particularly in cases due to hemorrhage, by intravenous injection of colloidal gelatin. He arrives at this method by determining the amount of urine excreted following intravenous injections of salt solutions of varying strengths. On account of the non-colloidal nature of salt solutions, the water soon escapes from the blood vessels and is excreted by the kidneys. The rise in blood pressure following infusions of saline is only temporary. Colloidal gelatin or blood serum, which is also colloidal, does not have this tendency to escape from the blood vessels, and hence there results an increase in blood pressure, which persists for a longer time.

The colloidal gelatin is prepared by adding 25 gm. of the purest and freshest gelatin and 1.5 gm. of sodium chlorid to 100 c.c. of distilled water, and boiling for fifteen minutes. This is filtered through a heavy paper on a hot funnel and autoclaved at 124 C. (255.2 F.) for an hour. It is next chilled in an ice-box. If it solidifies, it has the proper colloidal qualifications. When it is to be used, the gelatin is warmed until it is melted, and is added to 1,000 c.c. of a 0.9 per cent. sodium chlorid solution which also contains 2 gm. of sodium carbonate crystals ($Na_2CO_3 \cdot 10H_2O$). This is warmed to body temperature and injected. Hogan obtained excellent results in hemorrhage cases, and he thinks that shock due to injury or during operation may also be controlled in this way. Shock in septic cases is hopeless.

There are other methods of treating shock which have also been found useful and which may be resorted to. If the symptoms are not urgent, enteroclysis is of value. In the urgent cases, intravenous infusion of physiologic saline solution will fill the blood vessels more rapidly. If there have been several hemorrhages, as much as 16 ounces or more may be given. This may be carried on in conjunction with enteroclysis. To the rectal infusion, which is given by the drip method, black coffee may be added.

Subcutaneous injections of saline solution may also be given, usually into the loose tissue under the breast, 8 ounces every three hours.

To all of these solutions there may be added 5 c.c. of epinephrin solution (1:1,000) to every 500 c.c. of solution. Epinephrin (in 1:1,000 solution may be administered by itself in small doses, hypodermically.

Besides these more deliberate treatments of shock, a number of more quickly acting methods are often of value in holding the patient until one or other of these injection methods may act. Acute pain must be stopped by a hypodermic of morphin. Acute hemorrhage must be stopped at the bleeding point if possible. Acute anemia of the brain should be treated not only by elevation of the foot of the bed and elevation of the legs, but even by Esmarch bandages around the legs, driving the blood still remaining in the body toward the vital regions. A tight abdominal bandage is often a great advantage in increasing the general blood pressure. The patient should be surrounded with hot water bags to conserve heat, which he is rapidly losing. More or less vigorous massage over the cardiac region, especially the base of the heart, often causes more active contractions of the heart.

Strophanthin given intravenously into one of the veins of the elbow, provided the patient has not been taking digitalis, is sometimes effective in stimulating the heart until other measures may act. A good preparation is that in sterile ampules, each containing 1 c.c. of a 1:1,000 solution. This injection may be repeated in twelve hours, but generally not again. It is dangerous to use strophanthin if the heart is thoroughly under the influence of digitalis.

Digitalis is not valuable in emergencies, as it is too slow to act. Camphor, in sterile saturated solution in oil, given hypodermically, is somewhat of a nervous stimulant, and this may be repeated for several times at two or three hour intervals. Strychnin may be administered in doses of $\frac{1}{30}$ grain hypodermically, but this dose should not be continued oftener than once in six hours. Ergot in aseptic preparation given intramuscularly, once in from six to eight hours, will often increase the blood pressure, and therefore the circulation at the base of the brain. Pituitary extract in solution of 1:10,000 may also aid in stimulating the heart and increasing the blood pressure. If there is profuse perspiration with a failing respiration, a dose of atropin may be given hypodermically, $\frac{1}{100}$ grain.

Small amounts of hot liquids taken into the stomach are of value, as hot coffee, hot tea or hot bouillon, and if there is any improvement at all, hot, thin cereal gruels cause improvement in the general condition.

It should be urged not to push any one drug too far, or to give too many drugs at once.

The acute shock having been improved, or rather a "collapse turn," which is perhaps the better term, having been overcome temporarily, at least, the more active measures previously suggested, in the way of transfusions or intravenous injections, etc., should be inaugurated. The treatment of shock is always more or less unsatisfactory, while collapse may occur rapidly and be relieved quickly by well directed treatment. In typical shock, the progress is downward for hours, even with plenty of time to inaugurate any treatment. Hence the prevention of this condition is of paramount importance.

6. Hogan, J. J.: The Intravenous Use of Colloidal (Gelatin) Solutions in Shock, THE JOURNAL A. M. A., Feb. 27, 1915, p. 721.

Defective Vision in Schoolchildren.—More than 83,000 children in the rural schools of Pennsylvania were discovered to have defective eyesight during the medical inspection made in the school year of 1914 and 1915 under the direction of Commissioner of Health Samuel G. Dixon. Of this number 1,184 had defects of the right eye, 1,750 had defects of the left eye, and 53,814 had defects of both eyes.—*News Letter*, The National Committee for the Prevention of Blindness, April 1, 1916.

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SATURDAY, MAY 6, 1916

THE NUTRITION OF THE NEW-BORN INFANT

No mammal mother is so completely incapacitated for carrying out the duties necessary to protect and nourish her young during the first few days after parturition as is civilized woman. On the first day after birth, the mother is usually absolutely dependent on the ministrations of others. The infant shares this dependence. Even the natural food supply of the parturient mother is extraordinarily small, for the total fuel value of the colostrum is insufficient during the first few days, even under the most favorable circumstances. These statements by careful students of the physiology of the new-born infant,[1] expressing facts long appreciated by pediatricians, serve to raise a number of questions of practical as well as of theoretical importance. There are many who will say, with the characteristic mental inertia established by long custom, that experience has given adequate indications for the management of the early days of infancy, and that attempts to "improve on Nature" are alike gratuitous and futile.

If the medical profession were to approve unhesitatingly this sort of *laissez faire* policy of viewing the experience of every day life, progress would indeed be slow. It must be remembered, furthermore, that in the case of the new-born infant, a large element of artificiality has entered into the conditions surrounding the early days of life. The accepted provision for the care and management of the infant are far from being dictated solely by "natural" provisions. It is entirely rational, therefore, to inquire as to the infant's peculiar needs during the first few days and whether the new-born child becomes automatically adjusted to the conventional state of affairs to which it is introduced.

The practices which follow parturition are by no means universal. The familiar loss of body weight shortly after birth has already been the subject of numerous experimental investigations with respect to the possibility or desirability of attempting to avert it. At the Boston Nutrition Laboratory of the Carnegie Institution of Washington, Benedict and Talbot[1] have recently made an elaborate investigation of the character and amount of the metabolism of the new-born infant. In reviewing this subject they have noted that the loss in weight may not be taken as an index of its physiologic needs for nourishment, since an analysis of the character of this loss in weight shows us that there are two distinct causes: (1) mechanical and (2) physiologic. The loss of meconium, of allantoic fluid regurgitated from the stomach, of urine, and even of preformed water is mechanical. The most important physiologic loss is that due to the actual oxidation of body substance as a result of metabolism. With the first moment after delivery and as soon as the lungs have become filled with air, the infant begins to oxidize body substance, this material being chiefly fat, with some protein and some carbohydrate. The loss of water as a factor in decline of body weight must not be overlooked.

The statement is sometimes made that the metabolism of the infant is of a peculiar kind. Thus it is alleged that there is an excess of glycogen available in the body of the new-born infant. The study of the respiratory quotient of a large number with unusual care soon after birth has now shown the precise nature of the nutritional factors concerned. Benedict and Talbot state that the profound influence of the mother's milk on the character of the catabolism is shown by the fact that the time when the milk begins to appear in the mother's breasts almost invariably coincides with the increase in the respiratory quotient. On the first day of life the infant is subsisting on the moderate amount of glycogen in the body at birth. On the second, third and fourth days the colostrum is entirely insufficient to supply the needed energy; on the fifth day the milk flow is usually established, and subsequently the respiratory quotient is not far from 0.81, indicating a catabolism in which somewhat over one third of the energy is derived from carbohydrate. This quotient is not far from that found with normal persons. There is no indication that the infant at birth has an excessive supply of glycogen in the tissues.

The observations made by these investigators indicate that there is a distinct correlation between the body temperature of the infant and the total metabolism, for on the days with low body temperature the total metabolism was likewise low. These low temperatures are seldom found other than on the first day after birth. They are regarded as due solely to the exposure incidental to the birth, the subsequent bath, and other special details of the care of a new-born infant. It is of peculiar significance, therefore, that on the first day, when the low temperatures predominate, Benedict and Talbot find likewise a somewhat

1. Benedict, F. G., and Talbot, F. B.: The Physiology of the New-Born Infant, Carnegie Institution of Washington, Publication 233, 1915.

lower metabolism per kilogram of body weight and per square meter of body surface than on the subsequent days, thus bearing out the contention that the metabolism is considerably affected by the temperature of the infant's body.

On the basis of these measurements, the daily energy requirement for infants from 1½ to 6 days old is estimated at approximately 62 calories per kilogram of body weight. This includes the requirement for maintenance and a modicum of activity; it makes no special allowance for the needs of growth, which is usually in abeyance during the period noted. The energy loss can be reduced by intelligent nursing in the early days. Muscular activity, such as is represented by unnecessary crying, can be avoided. The infant can be made comfortable by attention to minor details so as to avoid the shock of cold and other provocatives to muscular response. The temperature can be conserved in the early days of defective regulation of heat loss.

It can scarcely be doubted that even under the most favorable conditions the total amount of available energy in the colostrum which the child receives from the mother's breast during the first few days is wholly insufficient to supply the energy needs. Why Nature does not provide more liberally during the first few days is a teleologic question. Benedict and Talbot comment on the striking fact that only human mothers and new-born infants are so entirely dependent on the care of others. The relationship between this fact and the development of civilization is most interesting, and leads one to ask if this scant food supply is a natural consequence of civilization, and whether civilization is called on to remedy it.

Shall an attempt be made, as a rule, to supplement the contributions from the mother's breast? We tread here on the dangerous ground of uncertainty and controversy. If inanition actually ensues, the infant is obliged to subsist on its own body reserves, possibly to its detriment. It is argued that if acidosis resulting as a consequence is undesirable, the best method to combat it consists in feeding carbohydrate. Perhaps it is safe to abide by the advice of Benedict and Talbot. If supplemental feeding is necessary, they remark, it would seem on general principles that the food material most easily digested and most readily absorbed for oxidation would be a soluble carbohydrate. The carbohydrate possessing these qualities in the greatest degree is glucose, as it requires no hydrating ferment to convert it into the blood sugar. If the infant is to be fed, we may again emphasize the fact that a knowledge of the energy requirement for the first week is most important. Those in charge of the child at this time should, therefore, have practical experience in supplemental feeding, for a disturbance of the digestion in the first few days after birth is most harmful and may even prove fatal.

THE MUZZLING OF DOGS

The enforcement of regulations requiring the muzzling of dogs in cities is nearly always resented by the dog owner, who is quite sure that *his* dog is not likely to bite any one, and that he takes entirely too good care of the creature for it to be in any sense a danger to the community. Attempts, therefore, to make and enforce public ordinances which will absolutely prevent dog bites are looked on often as originating from heartless people who have no sympathy with animals, and who are prejudiced against domestic pets. Some recent statistics published by the New York board of health,[1] which show how large is the number of persons bitten by dogs in a city, would seem to be the best possible antidote for this sort of misunderstanding. Anything which makes it possible for the state of affairs represented by the number of dog bites reported to the New York board of health in a single year to continue is entirely too dangerous to human life to be allowed to exist unchecked, and, almost needless to say, is the cause of an immense amount of human suffering, physical and mental, because of quite inevitable solicitude as to possible results. Indeed, it is probable that if the attention of dog owners generally in large cities were called not only to the possibilities, but also to the actual danger to those around them, they would be quite willing to have their pets get accustomed to the slight inconvenience that a muzzle is to the animal for a while at first, in order to help effectively in the movement for protecting the public, which manifestly in this case needs protection.

During the past seven years, for which statistics are available, an average of more than 4,500 persons have been bitten by dogs in New York City under such circumstances that the bites were reported to the board of health. It is easy to understand that many dog owners and members of their families were bitten by pet dogs without any public record being made, so that these figures do not represent all the danger to which human beings were subjected from dog bites. During the past year, care has been taken to secure a report of the circumstances under which the bites were received in order to determine the necessity for the kind of control that canine pets need if there is to be proper limitation of this danger. Of the more than 3,000 dog bites reported since Sept. 1, 1914 (when a special muzzling ordinance went into effect), more than one tenth of the cases occurred in connection with dogs which made the attack while leashed. More than another tenth of the cases of bites were reported as inflicted by dogs supposed to be muzzled in such a way as to make biting impossible. In over 200 cases, passers-by on the street were bitten by dogs which, at the moment of making the attack, were both leashed

1. Weekly Bull., Dept. of Health, City of New York, N. S., iv, No. 49.

and muzzled. Altogether, very close to 1,000 persons were bitten in New York City under conditions in which such an accident was supposed to be rendered quite impossible because of a leash or muzzle, or both. Nearly 2,000 other persons were bitten; in 200 of these cases there was no record of the circumstances as regards the presence or absence of leash or muzzle.

These statistics bring home the necessity for the use, not of a makeshift, but of a proper form of muzzle. Dog owners are prone to think that any form of strap which passes round the head of a dog a few times is a muzzle in the sense required by law. The so-called figure eight muzzle has in the experience of New York proved to afford very little protection. Health authorities have the right to insist not only on a muzzle, but also on a proper form of muzzle.

DECREASE OF TYPHOID FEVER IN LARGE CITIES

There are few events in the history of disease prevention so striking as the decline in typhoid fever that has taken place in the last three decades throughout the civilized world. A recent president of the British Medical Association, Dr. Henry Davy,[1] stated that fifty years ago his immediate predecessor in practice frequently received as much as $1,500 a year for attending typhoid patients, but that during the past few years his own income from this source hardly averaged $25. While exact figures as to the extent of typhoid prevalence prior to about 1860 are lacking, it seems probable that typhoid fever attained a particularly high rate during the third quarter of the nineteenth century, owing to the growth of public water supplies at that period. In 1880 the typhoid rate in Berlin was 47, in Paris 90, in New York 31, and in Boston 42. Recognition of the share played by water in the dissemination of this disease led to numerous attempts to improve water supplies, and for various reasons these improvements were carried out in several European countries earlier and more completely than in the United States. The result was that in the latter part of the nineteenth century and for the first decade of the twentieth the typhoid rates in the leading capitals of Europe were much lower than in American cities of the same rank. This condition was justly regarded as a reproach to the sanitary management of American municipalities, and the contrast in typhoid fever prevalence became a frequent theme for unfavorable criticism.

The slowness of improvement in typhoid fever rates in the United States appears to have been due chiefly to two causes: first, the tardy recognition of the necessity for a pure public water supply, and, second, the large consumption of raw milk.

1. Davy, Henry: President's Address: Science in Its Application to National Health, Brit. Med. Jour., 1907, ii, 245; Lancet, London, 1907, ii, 273.

The earlier realization in many parts of Europe of the need for uncontaminated drinking water was perhaps due to the more extreme, or at all events the more obvious, pollution of European surface waters, itself a consequence of the greater density of population and smaller volume of water available for dilution. Whether for this reason or because of some defect in our social organization which prevents expert opinion from being accepted and acted on, the fact remains that until recently water-borne typhoid has been deplorably common in the large cities of this country. The unprecedented reduction that has occurred since 1905 must in part be attributed to the unremitting labors of sanitarians in educating and convincing the public concerning the dangers of impure water. It must probably also be in part ascribed to the development of the inexpensive but very effective method of purifying water by chlorination. There is little doubt that the great cost of water filtration imposed by the waste of water in American cities has been a barrier to the installation of filter plants. In many instances the amount of water pumped into the mains of American cities is from three to four times as great as the amount called for by European cities of similar size and industrial character. The high cost of purifying the excessively large volume of water thus demanded — much of it clear waste — long prevented the adoption of the older methods of water purification. The discovery of a cheap method of purification has hence been of great importance. The city of Milwaukee is an example of a community that was not sufficiently moved by the argument of a long continued high typhoid rate to undertake the construction of a filtration plant, but was quick to take advantage of the relatively cheap chlorination method. In point of fact, the typhoid reduction in cities like Milwaukee, Detroit and Buffalo has been one of the outstanding facts of sanitary progress in this country in the past few years.

The diminution of milk-borne typhoid has been quite as striking as that of the water-borne. Inspection of dairy farms may perhaps have had something to do with this, but there is reason to believe that the main factor has been the decrease in the consumption of raw milk. The growing use of heated milk — boiled or pasteurized — has gone far to diminish the amount of milk-borne typhoid to the level of that in European countries, where, as is well known, the use of unheated milk has long been relatively rare.

There is no doubt that the discovery of the existence of typhoid carriers and the measures taken to control their activities have had some share in the general reduction of the disease, but it must be remembered that the number of carriers is automatically reduced by any diminution in the amount of milk-borne and water-borne disease, and that the proportion of contact typhoid in the past has been comparatively slight. It is now clear that the principal factors in the dissemina-

tion of typhoid in the large cities of the United States have been polluted water and contaminated raw milk.

The degree of typhoid reduction that has been effected in a few years, presumably by the partial elimination of these chief causes, may be best appreciated from the data presented in our fourth annual summary of typhoid in fifty-seven large American cities, printed two weeks ago.[2] It is there shown that the typhoid rate in a population of over 20,000,000 declined from 19.59 in 1910 to 8.65 in 1915! It may be questioned whether a population of this size has ever shown in so brief a period such a sweeping typhoid reduction.

COOPERATION IN SOCIAL INSURANCE INVESTIGATION

During the last ten years, THE JOURNAL has frequently commented on the development of social insurance in Germany, England, Denmark, Norway and Sweden and other European countries. No other social movement in modern economic development is so pregnant with benefit to the public. The opinion has been expressed repeatedly that the problems involved in the conservation of the health and physical efficiency of laboring men and women in this country, and those in moderate circumstances must, sooner or later, become a vital issue. THE JOURNAL has emphasized that in each of the countries mentioned, members of the medical profession, although directly and vitally concerned in the administration of any social insurance plan, had without exception awakened too late to the importance of the question. As a result of their own lethargy and inactivity, they took no effective part in molding the legislation, and were forced to accept what was given them by the legislators and economists rather than to claim that to which they were justly entitled. In England, the country which most recently has adopted a general social insurance plan, Lloyd George, in framing his bill, consulted workmen, employees, employers, officers of labor unions, representatives of the "friendly societies," economists, sociologists and legislators, but until the bill was practically ready for presentation in the House of Commons, it apparently did not occur to any one to consult representatives of the British Medical Association, although the assistance and cooperation of physicians were absolutely indispensable to the successful operation of the law. Coming into the discussion late in the day and after many of the essential principles involved had been determined, the representatives of the British Medical profession were able to secure with extreme difficulty only a part of the concessions which they demanded. As THE JOURNAL has repeatedly pointed out, experience in other countries has clearly demonstrated that in the course of a comparatively short time the question of social insurance will become an important issue in this country. Physicians in the United States should profit by the experience of our professional brethren abroad and interest themselves in this question while it is still in a formative period.

This prediction has already been realized. Social insurance legislation in a more or less crude form has already been adopted in several states. Anticipating the introduction of bills on this subject in other states and desiring to harmonize such efforts as far as possible, the American Association for Labor Legislation sent out last fall a preliminary draft of a model bill on this subject, asking for criticisms and suggestions for its improvement. That the American Medical Association was awake to the importance of the situation was demonstrated by the admirable report presented to the House of Delegates at San Francisco in 1915 by Dr. Alexander Lambert, chairman of the Judicial Council. At the same time that the American Association for Labor Legislation sent out its tentative bill, it also through its secretary, Dr. John B. Andrews, asked for the cooperation of the American Medical Association in drafting the sections of the bill which apply to physicians and their relation to social insurance. The problem involved embraces both the ethical and economic relations of individual physicians and the social relations of the profession as a whole. It is, therefore, plainly one which comes within the province of both the Judicial Council and the Council on Health and Public Instruction. After due consideration by these two councils, a special committee was authorized, consisting of the chairmen of the two councils and a third member to be selected by the chairmen. This committee, as constituted in December, consisted of Dr. Alexander Lambert, chairman of the Judicial Council, as chairman, Dr. Henry B. Favill, chairman of the Council on Health and Public Instruction, and Dr. Frederic J. Cotton of Boston. Dr. Favill's untimely death in February was a severe loss to the committee. One of the last official acts of his life was to appear before the Board of Trustees at their February meeting with Dr. Lambert and to plead for a liberal appropriation for this committee. The Board of Trustees, realizing the importance of this work, made an adequate appropriation for the coming year. Headquarters for the committee have been established at 131 East Twenty-Third Street, New York, in close cooperation with the offices of the American Association for Labor Legislation. Dr. I. M. Rubinow, author of "Social Insurance," has been secured as the executive secretary of the committee.

This action should result in a careful, authoritative study of the many and complicated problems involved in social insurance, and should make it possible for the American Medical Association to render valuable aid in solving this important social problem. A preliminary report on the subject will be presented at the Detroit session, but it will probably require two or

2. Typhoid in the Large Cities of the United States in 1915, special article, THE JOURNAL A. M. A., April 22, 1916, p. 1305.

three years' work to collect the necessary data and arrive at definite conclusions as to what is to be the position of the medical profession of this country in the ultimate solution of the problem. In the meantime, it is urged that individual physicians and medical organizations refrain from isolated active efforts, either for or against social insurance bills in state legislatures, in order that the attitude of the profession on this subject may be harmonious and that its influence may be exerted unitedly and effectively.

WHAT IS A VITAMIN?

The term "deficiency disease" is being applied to nutritive disorders caused by the continued absence from the diet of a suitable supply of substances which, while necessary to the metabolism, are not identical with the familiar nutrient sources of energy or the inorganic salts supposed to be essential for physiologic functions. The first to point out the importance of such substances for nutrition was doubtless F. Gowland Hopkins of the University of Cambridge, England. The name "vitamin" was applied to them by Casimir Funk.

As was pointed out recently in these columns,[1] however, it is by no means certain that these substances are even members of the same or of a related class, although it has become usual to refer to them as vitamins. Inasmuch as evidence is accumulating from the researches of McCollum, Osborne, Mendel and others that the processes of growth are promoted by "accessory substances" soluble in fats, if not identical with them, and that these are quite different in chemical behavior from the "vitamins" which induce recovery from the now familiar polyneuritis of birds fed on an exclusive diet of polished rice, the propriety of the unrestricted use of the word "vitamin" may well be questioned. Judging by the indefinite way in which popular and even some scientific literature on nutrition and diet has begun to employ the term "vitamin," a word of caution seems timely.

In reviewing this situation, Mendel[2] has remarked: "It is not unlikely — to speak conservatively — that there are at least two 'determinants' in the nutrition of growth." McCollum and Kennedy[3] have offered a most appropriate criticism of the current careless use of words, as follows:

> By "vitamine" Funk and his co-workers indicate a class of substances the chemical nature of which is at present unknown. They are described as being precipitated by phosphotungstic acid and by mercuric chloride, but aside from this property there is no evidence that these substances of unknown constitution which are active in promoting growth, or in relieving the symptoms of polyneuritis, contain an amino group. Furthermore, the prefix *vita* connotes an importance in biological processes paramount to that of certain other absolutely indispensable organic complexes, among which are a number of amino acids. We feel that this term is not in harmony with a conservative tendency in the nomenclature of biological chemistry, which should avoid the employment of a term which carries the idea that one indispensable complex is of greater importance biologically than another one equally indispensable. Furthermore, the evidence of the presence of an amino group in the substances under consideration is too slight to warrant the use of the ending *amine*, which carries with it a definite meaning in organic chemical nomenclature.

Hopkins introduced the term "accessory" for substances of unknown chemical character, found in milk, which render the addition of small amounts of milk to rations consisting otherwise of purified food substances effective in promoting growth. The term "accessory" carries with it the idea of a subordinate rôle, and in this sense has been employed by writers on dietetics as synonymous with "condiment."

McCollum and Kennedy accordingly suggest "the desirability of discontinuing the use of the term 'vitamine,' and the substitution of the term 'fat-soluble A' and 'water-soluble B' for the two classes of unknown substances concerned in inducing growth." They maintain that these decidedly inelegant and clumsy terms have the merit of not attributing extravagant values to these bodies, and they differentiate between the substances or groups of substances only with respect to their solubility relations, which is the only basis of differentiation at present known. These terms have the additional advantage that further letters may readily be introduced as investigation progresses, provided there proves to be more than a single representative of each class, and also that they will automatically fall into disuse when we come to possess definite knowledge of their chemical nature. It is not the function of THE JOURNAL to invent a nomenclature for an interesting group of substances evidently important for the nutritive processes. It can only warn against the coining of words and the multiplication of designations which will inevitably bring into the domain of nutrition study a profusion of names and a confusion of ideas such as those with which immunity investigation has continually struggled.

1. Modern Bread and Deficiency Diseases, editorial, THE JOURNAL A. M. A., April 22, 1916, p. 1314.
2. Mendel, L. B.: Nutrition and Growth, THE JOURNAL A. M. A., May 8, 1915, p. 1539; the Harvey Lectures, 1914-1915, Philadelphia, 1915, p. 126.
3. McCollum, E. V., and Kennedy, Cornelia: The Dietary Factors Operating in the Production of Polyneuritis, Jour. Biol. Chem., 1916, xxiv, 491.

A Factor in Hereditary Degeneracy.—THE JOURNAL has from time to time reported the results of experiments which tended to show that the continuous absorption of toxic products, even in small quantities, produces a degenerate or weakened offspring. Stockard and Papanicolaou have recently reported (*American Naturalist*, 1916, L, 65) the results of five years of experimental work, the result of which indicates that the germ cells of normal guinea-pigs may be so modified by alcoholization as to become incapable of producing normal offspring. Further, this result follows even though the organs of the parent show little or no effect of the alcoholization. The animal becomes fat, but appears healthy. The evil effects do not end, however, with these first offspring. Even though these are not alcoholized, degenerations and lack of vitality are transmitted to the next generation and onward so that the stock eventually dies out.

Current Comment

LIMITED ENROLMENTS IN MEDICAL SCHOOLS

As already reported,[1] the trustees of the University of Pennsylvania voted recently to limit the enrolment in the first and second year classes of the medical school to 100 students each. This is the fifth medical school in the United States to take action limiting its enrolment. Four years ago the Medical Department of Johns Hopkins University limited the enrolment in its classes to ninety students each. Two years ago in the Leland Stanford Junior University, School of Medicine, the enrolment was limited to about twenty-five students in each class. Last year Rush Medical College fixed the limit at 100 students each in the first and second year classes and 120 students each in the third and fourth year classes. At the University of Minnesota the enrolment in the freshman class of the medical school has been limited to eighty students. This action was taken by each of the medical schools named since it was believed that the limit fixed represented the largest number of students compatible with the most satisfactory medical training that could be furnished with the present organization of its faculty and the capacity of its laboratories. Experience has shown that a certain amount of individual instruction is essential for the best results in medical teaching, and that very few students are able to dispense entirely with such individual attention if they are to attain a high degree of proficiency in their courses. To crowd other students into the classes, therefore, would be to lower the standard of teaching for all students enrolled. If it should become necessary to make provision for larger numbers of students, it is believed that enlarged teaching facilities should be provided, preferably by establishing an additional teaching unit having its own faculty, laboratories, equipment and hospital facilities. Efforts to care for large numbers of medical students should not be permitted to interfere in any way with the highest efficiency in medical teaching.

TEACHING UNITS AND MERGERS OF MEDICAL COLLEGES

If, as indicated in the previous comment, the highest efficiency in medical teaching is obtained with classes of 100 students or less, then to attain this highest efficiency no medical school should be planned to care for more than 400 students in the four classes. In case it becomes necessary to provide for larger numbers of students, therefore, an additional teaching unit, with its separate faculty, laboratories and hospital facilities, would become essential for each additional 400 students. Thus in a university medical school there might be developed any number of separate teaching units. Although each teaching unit would be complete in itself, all would be under a central administrative control. The same standard for admission would be applied to all alike, all units would be equally financed, and all accounts, records, correspondence with students, schedules and the like could be looked after at the central administrative office. This suggests a plan, meanwhile, whereby mergers might be brought about in several of our large cities having two or more medical colleges. Each medical college might be made a separate teaching unit of the larger medical school. Thus, by having two or more medical teaching units under a single central control, confusion and duplication of expense in administration would be avoided, and all equipment, clinical material and the like could be utilized toward the highest development not only of undergraduate but also of graduate medical teaching. There is no reason why in the larger cities in this country, where there is an abundance of excellent clinical material, medical education, including graduate medical instruction, should not attain a stage of development as high as, if not higher than, that which now prevails in some of the larger cities of Europe.

1. Limits Enrolment of Students, General News, THE JOURNAL A. M. A., April 1, 1916, p. 1036.

DOES STRAW HAVE VALUE AS A HUMAN NUTRIENT?

In the face of a possible shortage in the national food supplies, German students of nutrition have been considering with scientific acumen the solution of contingent difficulties. The outcome has been a series of recommendations which include a reduction in the consumption of meat and its replacement by foods from plant sources, and also various suggestions as to the employment of products which have not occupied a recognized place in the nutrition of man. The discussions of these topics are interesting because of their inherent significance in the science of nutrition quite as much as for their reference to a novel situation. In this spirit, reference has already been made to the possible use of yeast as food.[1] Decidedly more radical is the suggestion to employ finely ground straw in the ration of man in the belief that it might furnish not a little nutrient in case of emergencies. There are enough scientific data already available to indicate that, in general, coarse plant products of the type rich in cellulose are at best poorly utilized because of the difficulties which the texture of the materials inevitably puts in the way of the alimentary processes. It is not to be denied that chemical analysis shows straw to contain some of the familiar nutrients. The first desideratum in the case of a substance like this is comminution into extremely fine powder to permit of more ready attack by the digestive secretions. The milling features are undoubtedly capable of accomplishment; but how about actual availability of the nutrients supposedly present? The physiologist Zuntz[2] of Berlin has put the matter to a severe test. His experimental subject was the pig, an omnivorous animal even more likely than man to exhibit a favorable digestive response to a crude food product. The outcome has been that out of 100 gm. of finely comminuted straw flour an energy value of not more than 30 calories became available, whereas the same initial quantity of cereal grain yielded 340 calories in the

1. Yeast in a New Rôle, editorial, THE JOURNAL A. M. A., April 30, 1916, p. 1390.
2. Zuntz, N.: Ueber Ernährungsfragen, Ztschr. f. ärztl. Fortbild., 1915, xii, No. 17.

same animal. In other words, the straw "flour" furnished only one twelfth of the available energy that the same amount of cereal did. Nor was this all. The large bulk of the straw induces increased secretion through the alimentary tract, resulting in an actual loss rather than a gain of protein to the body. Inasmuch as the lay press has already begun to refer to the possibility of using straw flour in the diet, the utter futility of such a procedure deserves prominent emphasis.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. Abraham Trumper, Montgomery, for more than four years assistant state bacteriologist and pathologist, has resigned to accept a position with the board of health of Philadelphia.——Dr. John P. Ellsberry, physician to the Alabama Old Soldiers' Home Hospital, Mountain Creek, has resigned, taking effect May 1. Dr. Ellsberry announces his retirement from the practice of medicine and states that he will reside at Spring Hill, a suburb of Mobile.

Mental Hygienists Hold Meeting.—At the annual meeting of the Alabama Society of Mental Hygiene held in Birmingham, April 8, Prof. Charles A. Brown, Birmingham, was elected president, and Dr. William D. Partlow, Tuscaloosa, was reelected secretary and treasurer. Dr. Thomas W. Salmon, New York, medical director of the National Committee on Mental Hygiene, delivered an address to the society on "Feeblemindedness" in which he advocated that a survey be made of conditions in Alabama and urged that for the care of feebleminded persons an institution be provided, separate and apart from the State Hospital for the Insane.

State Association Meeting.—The sixty-ninth annual meeting of the Medical Association of the State of Alabama was held in Mobile, April 18 to 21, inclusive, under the presidency of Dr. J. Norment Baker, Montgomery. Dr. William W. Dinsmore, Montgomery, was elected state jail and factory inspector, to succeed Dr. William H. Oates, Montgomery. The following officers were elected: president, Dr. Henry Green, Dothan; vice presidents, Drs. Edward Burton Ward, Selma; and William C. Maples, Scottsboro; secretary, Dr. Henry G. Perry, Montgomery (reelected); treasurer, Dr. Jacob Usry Ray, Jr., Woodstock (reelected); censors, Drs. Dyer F. Talley, Birmingham; Louis W. Johnstone, Tuskegee; Benjamin L. Wyman, Birmingham; and councilors, First District, Dr. James M. Austin, Wetumpka; Drs. William A. Stallworth, Beatrice; Louis E. Broughton, Andalusia; Fifth District, Dr. Philip M. Lightfoot, Cross Keys; Seventh District, Dr. Samuel G. Cardon, Center; and Tenth District, Dr. William O. Collins, Berry. The Jerome Cochran lecture was delivered by Dr. Howard A. Kelly, Baltimore on "Radium Therapy in the Treatment of Disease." At the public meeting addresses were delivered by Dr. William W. Dinsmore, Montgomery, on "Loss of Life from Preventable Diseases"; by Dr. Benjamin L. Wyman, Birmingham, on "Simple Facts Concerning Cancer," and by Dr. Oscar Dowling, New Orleans, on "Sanitation and Hygiene."

CALIFORNIA

Antituberculosis Society Meets.—The annual meeting of the California Association for the Study and Prevention of Tuberculosis was held in Fresno, April 19, and the following officers were elected: president, Dr. George E. Ebright, San Francisco; vice presidents, Drs. Charles H. Whitman, Los Angeles, and Philip K. Brown, San Francisco; secretary, Dr. George E. Tucker, Riverside, and executive secretary, Miss E. L. M. Tait, Sacramento. The association endorsed the Kent bill, which provides a federal subsidy for states in the care of tuberculosis patients.

Health Board Appointments.—The following appointments have been made by the health board of San Francisco: Dr. Joseph H. D. Roger, relief surgeon, Emergency Hospital, succeeding Dr. Frank P. McManus, Eureka, resigned; Dr. Lorin F. Wood, Jr., acting house officer, San Francisco Hospital, succeeding Dr. Charles L. Morris, resigned; Dr. H. Antonio Rosa, Roentgen-ray department of San Francisco Hospital; Drs. Ervin J. Casper and Glover B. Wilcox, surgical department of San Francisco Hospital, as representatives of the San Francisco Polyclinic.——The Fresno Board of Health has elected Dr. Albert H. Sweeney, health officer, and Dr. William L. Adams, city physician.

State Society Meeting.—At the forty-fifth annual meeting of the Medical Society of the State of California held at Fresno, April 18 to 20, San Diego was selected as the meeting place for 1917, and the following officers were elected: president, Dr. George H. Kress, Los Angeles; vice presidents, Drs. Lamont R. Willson, Fresno, and John C. Yates, San Diego; secretary, Dr. Philip Mills Jones, San Francisco (reelected); councilors, Drs. Cornelius Van Zwaluwenburg, Riverside, First District (reelected); Edward Clarence Moore, Los Angeles, Second District; Thomas C. Edwards, Salinas, Third District (reelected); George H. Aiken, Fresno, Fourth District (reelected); Curtis G. Kenyon, San Francisco, Sixth District (reelected); James H. Parkinson, Sacramento, Eighth District (reelected); and Oliver D. Hamlin, Oakland, and Henry A. L. Ryfkogel, San Francisco, at large (reelected). In addition to the regular program a public educational lecture was delivered by Dr. F. Dudley Tait, San Francisco, April 18, on "Physiologic Conditions."

GEORGIA

Meeting of Health Officers of State.—The fourth annual session of the Georgia Association of State, Municipal and County Health Officers was held in Columbus, April 18 and 19, under the presidency of Dr. Howard J. Williams, Macon. Dr. John T. Moncrief, Columbus, was elected president; Dr. Eugene E. Murphey, Augusta, vice president, and Dr. Clarence B. Greer of the state board of health, Atlanta, secretary-treasurer.

Georgia Physicians Hold Meeting.—The sixty-seventh annual meeting of the Medical Association of Georgia was held in Columbus, April 18 to 20, inclusive, under the presidency of Dr. William S. Goldsmith, Atlanta. Augusta was selected as the next place of meeting and the following officers were elected: president, Dr. Jarvis G. Dean, Dawson; vice presidents, Drs. Jesse M. Anderson, Columbus, and C. Kosciusko Sharp, Arlington; secretary-treasurer, Dr. William C. Lyle, Augusta (reelected); councilors, Drs. William L. Champion, Atlanta, Fifth District; Dr. John O. Elrod, Forsythe, Sixth District; Dr. Eugene M. Bailey, Acworth, Seventh District, and Dr. J. C. Bloom, Eighth District; delegates to the American Medical Association: Drs. Mallie A. Clark, Macon; Floyd W. McRae, Atlanta, and Stewart R. Roberts, Atlanta, and alternates, Drs. Edward C. Davis, Atlanta; James M. Smith, Valdosta, and Arthur G. Fort, Tifton. The association adopted a resolution to defend all malpractice suits that may be brought against its members.

ILLINOIS

Child Welfare Congress.—The seventeenth annual Child Welfare Convention of the Illinois Congress of Mothers and the Parent-Teachers' Association was held in Cairo, April 11 to 13.

State Hospital Staffs to Meet.—The State Hospitals Medical Association announces that it will hold its next meeting at the Anna State Hospital, May 25 and 26. All physicians are invited to be present.

Association for the Prevention of Blindness.—A meeting of the Illinois Association for the Conservation of Vision and Prevention of Blindness was held, May 2, in the office of Dr. William H. Wilder, Chicago, for the purpose of amending the by-laws of the association by the substitution of new by-laws to conform to the charter obtained for the organization, known as the Illinois Society for the Prevention of Blindness.

Personal.—The Moline Commercial Club and other citizens of Moline have sent a petition to the Board of Administration of the State of Illinois requesting that the order transferring Dr. Joseph A. Campbell, superintendent of the Watertown State Hospital, to another institution, be rescinded and that Dr. Campbell be retained in his present position.——Dr. John A. Wheeler, Springfield, sheriff of

Sangamon County, has made formal announcement of his candidacy for the republican nomination for governor of the state.——Dr. James W. Cormany has been reelected mayor of Mt. Carroll.——Dr. and Mrs. John E. Allaben and family, Rockford, have returned after a winter spent in the south.

Chicago

Clean Living.—The initial issue of *Clean Living*, published by the Commissioner of Health of Chicago, whose object is as stated "to seek to give constructive aid and advice in the great work of making Chicago a cleaner, safer city in which to live," has appeared. It is a sixteen-page magazine with cover and contains, in addition to short articles by members of the staff, cartoons and a timely poem on the 1916 fly.

Personal.—Dr. Ethan A. Gray has been elected chairman of the Edward Sanatorium Committee of the Chicago Tuberculosis Institute.——Dr. Willis O. Nance was reelected alderman from the sixth ward at the recent municipal election by a plurality of 6,702, the largest plurality given an aldermanic candidate. At the last meeting of the city council Dr. Nance was chosen chairman of the council committee on health for the fourth consecutive time.

Medical Reserve Corps Meeting.—The annual meeting of the Association of the Medical Reserve Corps, U. S. Army, Illinois Division, was held, April 27, under the presidency of Lieut. William H. Wilder. The following officers were elected: president, Lieut. Daniel A. K. Steele; vice president, Lieut. Rufus W. Bishop; secretary-treasurer, Lieut. John A. Hornsby (reelected); and councilors, Lieuts. P. J. H. Farrell and Clarence L. Wheaton.

Tribute to Dr. Sachs.—Tributes to the life and character of Dr. Theodore B. Sachs were paid at a memorial meeting of the Jewish Consumptive Relief Society held at the Hotel Sherman, April 26, at which Mrs. I. J. Robin, honorary president of the society, spoke of "Dr. Sachs as I Knew Him"; Rev. Tobias Schanfarber spoke of "Dr. Sachs, the Man and Physician"; and Mr. James Minnich, superintendent of the Chicago Tuberculosis Institute, described the work of Dr. Sachs in the tuberculosis movement.

Sanatorium Doings.—The Cook County Board has commenced social service work in tuberculosis by the engagement of a nurse to take control of the county's out-station enterprise. The homes of all patients in the Cook County Tuberculosis Sanatorium will be visited in an endeavor to clean up tuberculosis breeding spots and to eradicate root causes of the plague.——Dr. Walter A. Gekler has been appointed superintendent and medical director of the Municipal Tuberculosis Sanatorium, succeeding Dr. John W. Coon.——Health Commissioner Robertson is said to have informed the Civil Service Commission that it is proposed to spend at least $100,000 more this year than last in the conduct of the institution.

MARYLAND

Welch Talks on China.—Dr. William H. Welch, who is a member of the China Medical Board and recently returned from China, delivered an address, April 21, at the opening of the first Chinese Students' Conference, Baltimore, on "The Educational Situation and Needs of the Chinese," in which he told of the plans of the board for the establishment of modern education in China.

Personal.—Dr. John F. Byrne, Baltimore, has resigned as health warden for the fourth ward, and will return to his duties as a member of the medical staff of the Baltimore and Ohio Railroad.——Surg. William H. Marsh, U. S. P. H. S., underwent operation at the Church Home and Infirmary, Baltimore, April 29.——Dr. Edward N. Brush, Towson, underwent operation for appendicitis recently at the Johns Hopkins Hospital. He is reported as improving.——Dr. Joseph S. Baldwin, Freeland, who was operated on recently at the Johns Hopkins Hospital, is in a critical condition.

Transfer of Quarantine to Federal Government.—Baltimore city officials are preparing to turn the quarantine over to the federal government. Surg.-Gen. Rupert Blue, United States Public Health Service, has notified the mayor that he will discuss the plans for the transfer on May 1 or 2. The federal government will buy the buildings and grounds from the city and enter into an agreement under which smallpox patients will be treated at the hospital at the rate of $1 a day a patient. It is expected that the government will retain Dr. Thomas L. Richardson, Baltimore, and his assistants now at quarantine, and they will become employees of the Public Health Service.

Nation-Wide Survey for National Resources.—Drs. William S. Thayer and John M. T. Finney were the spokesmen for a committee representing many American medical organizations that presented a plan to the president, proposing a nation-wide survey to ascertain the number of doctors, surgeons, nurses, hospitals, ambulances and scientific supplies which the government might call on in the event of war between this country and any great power. Dr. William H. Welch spoke also for the Academy of National Sciences, of which he is president, urging a survey to determine the chemical, physical and natural resources available for government use in war.

Annual Meeting of the Medical and Chirurgical Faculty.—The one hundred and eighteenth annual meeting of the Medical and Chirurgical Faculty of Maryland was held in Baltimore, April 25 to 27. The following officers were elected: president, Dr. Guy Steele, Cambridge; vice presidents, Dr. Arthur H. Hawkins, Cumberland; Daniel E. Stone, Emmetsburg, and James M. H. Rowland, Baltimore; secretary, Dr. Joseph I. France, Baltimore; treasurer, Dr. William S. Gardner, Baltimore; members of the State Board of Medical Examiners: Dr. Herbert Harlan and Dr. Harry L. Homer, both of Baltimore; delegates to the American Medical Association, Dr. Alexius McGlannan, Dr. J. Hall Pleasants, Jr., Roland Park, alternate, and Dr. Randolph Winslow to fill out the unexpired term of Dr. G. Lane Taneyhill, deceased.

NEW YORK

Personal.—Dr. Charles D. Kline has been reappointed health officer of Nyack for a term of four years.

Quarantine Bill Signed.—Governor Whitman, April 27, signed the Adler bill transferring the New York State Quarantine establishment to the federal government. This bill creates a commission consisting of the governor, lieutenant governor, attorney general, controller, and state engineer and surveyor to negotiate the transfer of the quarantine property.

To Study Health Insurance.—The Mills bill, creating a commission to investigate health insurance and to report proposed legislation to the legislature in 1917, has passed the state senate. The measure provides that the commission shall consist of two senators, two assemblymen, and four other members to be appointed by the chairman. It carries an appropriation of $25,000.

Summer School for Teachers.—A summer training school for teachers in preparation for teaching special classes in the public schools and institutions for the feebleminded will be held at the Rome State Custodial Asylum from July 3 to 29. The school will be open to graduates of normal schools and teachers in training schools. There will be no charge for tuition, but a charge of $16 will be made for board and lodging. Applications for information or entrance to this school should be addressed to Dr. Charles Bernstein, Superintendent, Rome State Custodial Asylum, Rome, N. Y.

New York City

Memorial Gift for Library.—At the meeting of the King's County Medical Society, April 18, it was announced that the friends of the late Dr. George McNaughton, Brooklyn, had presented $2,500 to the society as a memorial library fund.

New Health Officer Assumes Duties.—Assistant Surgeon General Leland E. Cofer, U. S. P. H. S., recently appointed health officer of the port of New York, assumed the duties of his office at Quarantine, April 22. His first act was to announce as his deputy Dr. William F. Mathews, who has been acting health officer of the port.

Harvey Society Lecture.—The eleventh lecture of the Harvey Society given at the New York Academy of Medicine, April 29, was by Dr. William H. Welch of Johns Hopkins University on "Medical Education in the United States." A supper was given in honor of Dr. Welch by the society in Sherry's ball room after the lecture.

College Raises Entrance Requirements.—Long Island College Hospital, Brooklyn, announces that after Jan. 1, 1918, it will require the completion of two years of study in a college of liberal arts and sciences for admission to the four-year medical course leading to the degree of M.D. At present it requires but one year of college study. Beginning with next fall, Columbia University will conduct a premedical college year at the Long Island College Hospital.

Memorial to Dr. Huddleston.—The friends of the late Dr. John H. Huddleston, wishing to establish a fitting memorial to him, have decided to form an organization for the purpose

of developing the work of caring for what are known as "cardiac children." The work will be carried on under the general supervision of an executive committee, consisting of Dr. L. Emmett Holt, chairman, and Drs. Lewis A. Conner, Haven Emerson, Philip Van Ingen, Augustus S. Knight and Herbert B. Wilcox.

Change Site of Rice Hospital.—It was announced a few weeks ago that Mrs. Isaac L. Rice would build a memorial hospital for convalescents at Irvington-on-the-Hudson. The residents have objected to the establishment of the institution as was supposed, so the site has been sold. A contract has now been signed for the purchase of an estate north of Tarrytown. The estimated cost of the proposed hospital is $1,000,000, and Mrs. Rice announces that the institution will be run in cooperation with the directors of Beth Israel Hospital and will become an extension of the work of the latter institution.

Personal.—The council of New York University has appointed Dr. Samuel A. Brown dean of the Medical Department of the University.——Dr. Edward Levy has been appointed assistant in the department of pathology, physiology and pharmacology in the Medical College of New York University.——Dr. Clarence A. McWilliams has returned after a stay of a year in France during which he acted as chief surgeon of Base Hospital No. 32, Chateau de Passy.——Dr. Fred C. Paffard, Brooklyn, is recovering from an infection of the eyes which followed an operation performed in December last.

Proposed Changes in Department.—City Chamberlain Brewer has devised a plan for the reorganization of an enlarged department of health, creating a department of public welfare to take the place of the charities department, and this plan, he believes, if carried out will result in the saving to the city of $1,000,000 a year. The plan provided that the health department shall take over the control of the hospitals now under the jurisdiction of Bellevue and Allied Hospitals and the Department of Charities and of sheltering institutions other than municipal lodging houses. He suggests that the new department have four major divisions, namely, prevention, treatment, record and sanitary control.

NORTH CAROLINA

Health Officers Hold Meeting.—The sixth annual meeting of the North Carolina Health Officers' Association was held in Durham, April 17, under the presidency of Dr. Daniel E. Sevier, Asheville; Dr. Archibald Cheatham, Durham, was elected president; Dr. Darius C. Absher, Henderson, vice president, and D. W. Cooper of the state board of health, secretary-treasurer.

State Society Meeting.—The sixty-third annual session of the Medical Society of the State of North Carolina was held in Durham, April 18 to 21, under the presidency of Dr. Marshall H. Fletcher, Asheville, who protested against the state levy of $5 from physicians and recommended the establishment of community hospitals in every North Carolina town of 5,000 population and over. Asheville was selected as the next meeting place for the association, and the following officers were elected: president, Dr. Charles O'Hagan Laughinghouse, Greenville; vice presidents, Drs. David J. Hill, Lexington; Joseph L. Spruill, Columbia, and Jacob H. Shuford, Hickory; secretary, Dr. Benjamin K. Hays, Oxford (reelected); treasurer, Dr. William M. Jones, Jr., Greensboro (reelected); councilors, Drs. Kemp P. B. Bonner, Morehead City; William H. Ward, Plymouth; Ernest S. Bullock, Wilmington; Michael M. Saliba, Wilson; Ben H. Hackney, Bynum; Alton C. Campbell, Raleigh; John E. S. Davidson, Charlotte; Joseph W. Ring, Elkin; Minor R. Adams, Statesville, and Carl V. Reynolds, Asheville; delegates to the American Medical Association; Drs. John W. Long, Greensboro, and William L. Dunn, Asheville, and alternates, Drs. David T. Taylor, Washington, and David A. Stanton, High Point. The address in surgery was delivered by Dr. William J. Mayo, Rochester, Minn., on "Some Indications for Removal of the Spleen." Dr. Samuel E. Thompson, Carlsbad, Texas, delivered the address in medicine, and Mr. Wade H. Harris, editor of the *Charlotte Observer*, delivered an address on "The Newspaper and Public Health."

OHIO

Health Journal for Cleveland.—The Health Department of Cleveland has begun the publication of a monthly newspaper known as *Your Health*. It is issued under the direction of J. H. Halliday, chief of the Bureau of Health Education, and is distributed to the public.

Mendel to Speak Before Academy.—Dr. Lafayette B. Mendel, professor of physiologic chemistry in Sheffield Scientific School, Yale University, New Haven, Conn., will deliver an address on "Abnormalities of Growth" before the experimental medicine section of the Cleveland Academy of Medicine, May 12.

Ohio Hospital Authorities to Meet.—The second meeting and first annual convention of the Ohio Hospitals Association will be held at the Hotel Gibson, Cincinnati, May 24 to 26. The active members of the association, which number about 300, are trustees and the executive heads of hospitals, and the associate members are executive officers of hospitals. In addition to the scientific work of the meeting, arrangements have been made for large commercial and noncommercial exhibits. One of the most important educational features of the convention will be the inspection of the new Cincinnati General Hospital.

Personal.—Dr. Homer H. Heath, Toledo, has been elected chief of the reorganized staff of the Toledo Hospital.——Dr. George C. Stewart, assistant superintendent at the Cleveland State Hospital, has been appointed resident physician at the Warrensville Correction Home and Infirmary, which is maintained by the Welfare Department of the City of Cleveland. ——Dr. George W. Crile, Cleveland, delivered an address and held a clinic before the Allen County Medical Society at Lima, April 18. Dr. Crile also spoke before the Commercial Club of Omaha and the Creighton Medical College Alumni, April 24.

PENNSYLVANIA

Mosquito Campaign in Merion.—In order to make a thorough war on mosquitoes, Merion, a suburb of Philadelphia, has employed a mosquito expert who made a survey and now will make visits to property owners. He will point out where the insect may exist and ask each householder to remove the breeding place. Dr. Hornig, the city entomologist, has also lent his aid, and a bulletin, outlining the necessity for fighting both the mosquito and the fly, has been sent to every home.

Personal.—Dr. Emlyn T. Davies, Old Forge, underwent operation in the Taylor Hospital, Scranton, April 22, and is reported to be doing well.——Dr. Winfield S. McFarland, Sharpsville, who has been under treatment in the Buhl Hospital, is reported to be convalescent.——Dr. John C. Miller, Shenandoah, has started for Europe, where he will be on duty with the American Ambulance in Paris.——Dr. Charles H. Mann, Bridgeport, who has been ill for several days, is reported to be convalescent.——Dr. William H. Cameron, Pittsburgh, delivered an address on radium before physicians of Utica, N. Y., April 20.——Dr. Harold E. Hersh, Palmerton, sustained painful injuries in an automobile accident, April 15.——Dr. John A. Fritchey, Harrisburg, who has been seriously ill in a Philadelphia hospital for several weeks, is reported to be improving.

Philadelphia

Red Cross Work in Philadelphia.—Col. Jefferson R. Kean, M. C., U. S. Army, head of the Military Relief Section of the American Red Cross, was the principal speaker at a luncheon held at the Racquet Club, April 22, under the auspices of the executive committee of the local Red Cross chapter.——From April 24 to May 6, a Red Cross exhibit was held in the Widener Building and daily lectures on Red Cross work and first aid methods were delivered by men, most of whom had been identified with the American Ambulance Hospital in France and had seen service on the battlefields of the western front.

Appeal for Help to Finish Surgical Pavilion.—A committee composed of Provost Edgar Smith, Thomas S. Gates, Thomas Reath, and Doctors Edward Martin, Alfred Stengel, John B. Deaver, Charles H. Frazier, and Elijah H. Siter has issued an appeal to alumni, graduates, and Philadelphians to help finish the surgical pavilion planned some years ago by the members of the University of Pennsylvania Board of Managers. A part of this pavilion has already been built at a cost of $200,000, but owing to the need for money in the hospital there have been no surplus funds available for its completion, for which $300,000 more is needed. The size of the building will be 94 feet, 6 inches, by 92 feet, 6 inches, and 152 feet in height.

Personal.—Dr. Dudley J. Morton, chief of the Orthopedic Clinic of the Hahnemann Hospital, sailed, April 29, for France to spend four months at the American Ambulance Hospital, Nueilly-sur-Seine.——Dr. John Wanamaker III, a police surgeon, was severely beaten when he went to the

rescue of a young man who had been knocked out in a fight, April 23.——Dr. Warren B. Davis has been appointed aural surgeon on the visiting staff of the Philadelphia General Hospital.——Dr. Maurice Ostheimer has been appointed a member of the visiting staff of the Hospital for Contagious Diseases, and Drs. Frank C. Hammond and F. Hurst Maier have been appointed gynecologists of the same institution. ——Dr. and Mrs. Lewis S. Somers have returned after several weeks in Porto Rico.

SOUTH CAROLINA

Personal.—Dr. Harry S. Mustard, Charleston, has been appointed acting assistant surgeon, U. S. P. H. S., in the rural sanitation department, and has been assigned to field work in Georgia with headquarters at Rome.——Dr. Robert H. Crawford, who has been engaged in Red Cross administration work since his return from Europe, has resigned and will practice in Rock Hill.

State Association Meeting.—The sixty-eighth annual convention of the South Carolina Medical Association was held in Charleston, April 18 to 20, under the presidency of Dr. Gottlob A. Nuffer, Abbeville. Dr. Curran B. Earle, Greenville, was elected president; Drs. Charles R. May, Bennettsville; Clarence L. Kibler, Columbia, and Henry M. Stuckey, Sumter, vice presidents; Dr. Edgar A. Hines, Seneca, secretary-treasurer (reelected), and councilors, Drs. Josiah S. Matthews, Denmark, Second District; Robert R. Berry, Union, Fourth District; William S. Lynch, Scranton, Sixth District, and Washington P. Timmerman, Batesburg, Eighth District. The association also reelected the following State Board of Medical Examiners: Drs. Harry H. Wyman, Aiken; Harry L. Shaw, Fountain Inn; A. Moultrie Brailsford, Jr., Mullins, and A. Earle Boozer, Columbia. Spartanburg was selected as the next place of meeting. The address in surgery was delivered by Dr. William J. Mayo, Rochester, Minn.; that in medicine by Dr. Lewellys F. Barker, Baltimore, and that in pediatrics, by Dr. Maynard Ladd of Harvard University. A resolution was adopted by the convention that the association appoint a Committee on Medical Education, consisting of five members, to act in an advisory capacity in cooperation with the State Medical College, keeping the association and college in closer touch.

CANADA

Grenfell Returns to Labrador.—Dr. Wilfred T. Grenfell reached New York, April 16, after three months' service on the western front in France with the Harvard unit. He is now, as he says, "going back to the fighting line in Labrador."

Extending the Women's Hospital in Toronto.—The Toronto Women's Hospital will commence a three days' campaign in May to raise $120,000 for the extension of their hospital. Plans have been prepared for a four-story building to accommodate sixty beds. This, with equipment, will cost about $90,000, and an additional $25,000 would finish paying for the property.

Tuberculosis Institutions in Canada.—Tuberculosis sanatoriums in Canada now have accommodation for 1,800 beds, or one bed for every 4,407 of the population. All of these with the exception of one in Nova Scotia have been the result of private initiative and private philanthopy, assisted later on by municipal and provincial governments. In Scotland the ratio is one bed for every 1,750 of the population, while in the United States it is one for 2,900. The province of Ontario leads the other provinces in this respect where there is one bed to 2,403 of the population. Manitoba comes second in the matter of provision for the tuberculous. As a result, in Ontario there has been a very marked decrease in the deaths from tuberculosis; Manitoba comes second in the decrease of the death rate. In the provinces, where there is little or no accommodation provided, there has been no decrease in the death rate from this disease.

Personal.—Dr. Edwin C. Beer, Brandon, Man., who joined the C. A. M. C. at the beginning of the war and who has been on active service at the front, has been appointed on the staff of No. 1 Canadian General Hospital, Etaples, France.—— Dr. William S. Harrison, Toronto, presided at the annual conference of the Canadian Fraternal Association held in Toronto last week, and Dr. John Ferguson, Toronto, the immediate past president, was presented with a handsome clock. Dr. George Elliott, chairman of the medical section, presented a resolution, which was unanimously adopted, calling on fraternal societies to institute campaigns of education among their members looking toward periodic medical examinations. Dr. Theodule Cypinhot, Montreal, was elected chairman of the medical section.——Dr. Charles K. Clarke, dean of the medical faculty of Toronto University, has recently received a letter from a member of the University Hospital staff at Saloniki which stated that the value of typhoid inoculation could be gaged by the remarkably few cases of fever the hospital had had to deal with in that region. All the members of the hospital unit are in good health.

Provincial Medical Association Meeting.—The thirty-sixth annual meeting of the Ontario Medical Association will be held in Toronto, May 31 to June 3, under the presidency of Dr. Harry B. Anderson, Toronto. Among the important problems to be discussed are The Workmen's Compensation Bill, the activities of the Commission on Medical Education, and the propaganda of the Committee on the Organization of County Medical Societies. The address in medicine is to be delivered by Dr. Elliott P. Joslin, Boston, on "The Treatment of Diabetes"; that in surgery by Dr. Dean DeWitt Lewis, Chicago, and that in gynecology by Dr. James F. Percy, Galesburg, Ill. Symposiums are to be held on "The Rôle of the Nose, Mouth, Throat and Accessory Sinuses in Relation to Systemic Disease"; "Drugs and Medical Agents" considered from the professional, national and economic standpoints, and "The Returned Soldier's Problems from the Medical, Military, Vocational and Economic Viewpoints." An invitation has been issued to the Canadian Medical Association to hold its executive session in connection with the annual meeting, and the medical officers of health of Ontario will hold their annual convention on the two days preceding the meeting of the Provincial Medical Association.

GENERAL

Anesthetists to Meet.—The fourth annual meeting of the American Association of Anesthetists will be held at the Hotel Tuller, Detroit, June 12, under the presidency of Dr. Willis D. Gatch, Indianapolis. The subject of the presidential address is to be "Instruction of Medical Students and Hospital Interns in Anesthesia."

Confederate Surgeons to Meet.—The twenty-sixth annual meeting of the Association of Medical Officers of the Army and Navy of the Confederate States will be held at the Hotel Tutewiler, Birmingham, Ala., May 16 to 18. The new constitution of the association is to be considered in which it is stated that the objects of the association shall be to collect all data possible relating to the medical departments of the army and navy of the Confederate States; to ascertain the military records of all officers and prepare a roster of the same; to honor the memory of its deceased members and to perpetuate the history of the medical departments and of the association.

Academy of Medicine Meeting.—The provisional program for the forty-first annual meeting of the American Academy of Medicine has appeared. The meeting will be held at the Hotel Statler, Detroit, June 9 to 12, under the presidency of Dr. Woods Hutchinson, New York. The two principal topics to be considered are to be "The Relation of Legislation to the Practice of Medicine," and "The Relation of the Science of Medicine to Legislative Enactment." On Sunday afternoon the seventh annual conference on Western medicine in Eastern lands will be held at the First Presbyterian Church, and over this conference Dr. L. Duncan Bulkley, New York, will preside.

A New Physiologic Publication.—The first issue of *Physiological Abstracts* has just appeared. It is issued under the sponsorship of the Physiological Society of Great Britain and Ireland, with the cooperation of the American Physiological Society, and ten other American, British, and continental scientific bodies. It also bears the names of many distinguished workers in the field of physiology. The list of collaborators contains no representative of the German or Austrian scientific organizations. The first number contains sixty-eight abstracts from twenty-one sources; these are arranged under subject headings such as General, Physical and Chemical, Special Senses, etc.

Ruling on Narcotic Law Revoked.—The ruling contained in Treasury Decision 2292, amending Treasury Decision 2244, requiring the narcotic content of preparations and remedies in grains to the fluid or avoirdupois ounce, or the quantity of narcotic drug in grains or fractions thereof contained in a tablet or pill, to be indicated on official narcotic order forms, was revoked, April 24. Hereafter the name of the preparation, the quantity in ounces, if it be in liquid form, or if in tablet, pill, ampule or suppository form, the units or total thereof, and the name of the particular narcotic drug contained in such preparations, tablets, pills, ampules or suppositories, need only be entered on these order forms.

Red Cross Prizes.—The American Red Cross announces that it will give various prizes on December 1 for achievements in connection with the campaign to enroll one million members. Miss Lusita Leland, New York, offers a gold medal to the individual who secures the greatest number of members for the Red Cross by December 1. Mrs. W. Murray Crane, Dalton, Mass., offers five silver medals as the second, third, fourth, fifth and sixth prizes to those who secure the largest number of Red Cross members by the same date, and Miss Mabel T. Boardman of the executive committee offers a silver medal to the community which has the largest number of members per capita and another silver medal to the chapter of the American Red Cross which can show the largest Red Cross membership increase per capita of the population of the community.

The Wine of Cardui Suits.—In THE JOURNAL last week (p. 1396) the death of Mr. John A. Patten, managing partner of the Chattanooga Medicine Company, was announced. When the present trial began there were two suits against the American Medical Association and the editor of THE JOURNAL. The first was that of John A. Patten, personally, for $200,000; the second, that of John A. Patten and Z. C. Patten, Jr., doing business as the Chattanooga Medicine Company, was for $100,000. Following the death of Mr. Patten on April 26, Judge Carpenter excused the jury until Tuesday, May 2. When the court reconvened Tuesday morning the first suit (that of Mr. Patten personally) was declared abated because of the death of the plaintiff. As we go to press the following witnesses, in addition to those mentioned last week, have testified for the American Medical Association: Dr. Nathaniel H. Adams, Oak Park, Ill.; Dr. G. M. Goodard, Waxahachie, Texas, and Dr. Hugh McKenna, Chicago.

WAR NOTES

Plastic Surgery of the Face.—On account of the unusual proportion of injuries of the face due to trench warfare, a committee has been formed to solicit subscriptions of $20,000, which will establish a hospital of 100 beds. It is eventually hoped to equip a hospital with 500 beds. Dr. Herbert L. Wheeler, New York, is chairman of the committee.

Personal.—Dr. Philip Newton, formerly of Washington, who has been in the United States on a brief furlough after nearly two years of service with the Russian army, returns shortly to Russia, taking with him fifteen new and fully equipped ambulances.——Dr. Richard H. Harte, formerly director of Public Health and Charities of Philadelphia, is on duty at the American Ambulance Hospital, Neuilly-sur-Seine.

Shipments to Central Powers Stopped.—Owing to the strictness of the blockade of the allied powers against the central powers, the American Red Cross for several months has been unable to secure the required permission from the allied powers for the shipment of supplies of any kind to the central powers. On account of the lack of proper storage room in the Brooklyn Terminal Warehouse, it has now become necessary to request Red Cross chapters and other relief organizations not to send any more supplies for the central powers to the warehouse for shipment until further notice.

Aid for Belgian Physicians.—The report of the committee of American physicians for the aid of the Belgian profession, shows no contributions for the month of April, 1916.

Previously reported receipts		$7,941.86
Previously reported disbursements:		
1,625 standard boxes of food at $2.20	$3,575.00	
1,274 standard boxes of food at 2.30	2,930.20	
353 standard boxes of food at 2.28	804.84	
Total disbursements		7,310.04
Balance		$ 631.82

F. F. SIMPSON, M.D., Treasurer,
5 Jenkins Arcade Building, Pittsburgh.

Bequests and Donations.—The following bequests and donations have recently been announced:

Germantown and Hahnemann hospitals, Philadelphia, each $5,000, for the endowment of beds by the will of Sara Stevenson Cox, who died March 31 on the Island of Jersey.

Presbyterian Hospital, Philadelphia, $10,000, by the will of Fannie Brown.

Madison (Wis.) General Hospital, donation of $1,000, in memory of his deceased daughter, Martha Louise Kroft, by Oswald Kroft, Chicago.

Home for Destitute Children, Glenwood Manual Training School, Alexian Brothers Hospital, Illinois Humane Society and Visiting Nurses' Association of Chicago, in equal parts the income from the $120,000 estate of Mrs. Laura May Whitehouse on the death of the sister of the testatrix.

Dr. John P. Ellsberry, Mountain Creek, Ala., the remainder of the estate of Miss Kate Lassiter, which has been appraised at $8,000, after the payment of legacies.

LONDON LETTER

LONDON, April 10, 1916.

The War

AMPUTATIONS IN THE WAR

Unfortunately the present war is furnishing an enormous experience in amputations. The War Office has issued a memorandum on amputations and amputation stumps which brings together, for the benefit of physicians serving in military hospitals at home and abroad, the experience gained by the surgeons at home in the treatment of military cripples. In the fitting of artificial limbs, many of the cases which, as far as the condition of the wound goes, are ready for fitting, present stumps more or less objectionable from the limb makers' point of view. It is pointed out that while the site, and often the method of an amputation is mainly determined by the injury, the surgeon often is able to use his discretion not only in the matter of the immediate surgical condition, but also with regard to the future usefulness of the stump. For example, while, as a general rule, the amputation stump should be made as long as possible, yet the longest is not always the most useful or the best for the fitting of an artificial limb. Amputation through a joint (below the shoulder or hip) leaves no room for the fitting of a joint at its proper level in the artificial limb, and it may therefore often be better to amputate just above a joint rather than through it, unless, of course, a still lower site is available. "Guillotine" amputation—that is, straight through the limb, or circular without flaps—is excellent in suitable cases, in order to secure the freest possible drainage with the least sacrifice of tissues, but it must be followed by secondary amputation as soon as the wound is clean. With regard to amputation through the leg, the fact is emphasized that kneeling stumps are extremely undesirable at the present day, and that therefore all stumps below the knee should be kept straight in extension and not allowed to become contracted. The best amputation through the hip joint is said to be that by an anterior racquet, tying the main vessels in the first incision. From the prosthetic point of view the chief requirements of a good stump are (1) a good covering for the bone; (2) sound healing; (3) consolidation; (4) painlessness, and (5) freedom of movement. Consolidation of the soft parts continues for several months, so that if a bucket limb is applied prematurely it soon becomes loose and ill fitting from shrinkage of the stump. As a general rule, four months should elapse from the date of amputation before any attempt is made to fit an artificial limb. During this period consolidation may be hastened, and the condition of the stump much improved, by firm bandaging. The conditions which prevent or delay the fitting of an artificial limb are (1) sinuses; (2) painful stumps; (3) unsound scars, and (4) contracture in the neighborhood of the joint immediately above the amputation. Localized pain on pressure is nearly always due to a bulbous nerve end near the end of the stump, but in some cases the nerve end is spread out and adherent to the bone or to the scar. As painful nerve ends are not always evident to the patient until pain, which may be intolerable, is elicited by the pressure of the bucket, they should be sought for by the surgeon and removed before the artificial limb is fitted. The principal nerves should always be identified and cut short at the primary amputation. Diffused tenderness, on the other hand, is, except in recent stumps, usually due to periostitis or necrosis, the latter, of course, calling for operation. Pain, either localized or diffuse, is sometimes due to bony spicules projecting from the end of the bone. Such osteophytic outgrowths are commonest in stumps about the middle of the thigh, and may have to be removed before an artificial limb can be worn.

WAR MARRIAGES

At the Institute of Hygiene, Dr. Murray Leslie lectured on "The Disabled Soldier: His Future and his Economic Value." He said that the British casualties in the present war up to February 1 numbered 550,000, whereas the total casualties during the whole of the South African War were under 50,000. These numbers would be greatly increased as the war went on, and it was estimated that for every thousand deaths recorded, there would be 200 cases of permanent disablement. The mere fact of a man's being a cripple, or even being deformed, would in no wise detract from his potentialities as one of the fathers of the future generation. The present marriage rate was the highest ever known. Those marriages, for the most part, had been confined to young, strong and active soldiers, although there were numerous instances in which our girls had been only too delighted to

marry the men of their choice after they had been disfigured or disabled. Women, as a sex, had an aversion for deformities of all sorts, but that would probably not hold good to anything like the same extent if the young couple had met each other before disfigurement took place. From that point of view war engagements, as well as war marriages, were greatly to be recommended. Admiration for our disabled war heroes should be encouraged. It had been proposed to found a League for the Marrying of Wounded Heroes. It was doubtful if such a scheme could be made a practical one, but there was much to be said for the principle. The economic question was the difficulty, yet how many women there were in this country with comfortable incomes who spent large sums on pampered lapdogs.

London Vital Statistics

The London County Council has just issued a report on public health containing some interesting vital statistics which may be compared with those for the country generally given in a previous letter. The marriage rate, which fell to a minimum (16.9 per thousand living) in 1908 and 1909, attained during the year 1914 the comparatively high level of 19.2, a figure which has not been reached since 1876. The exceptional circumstances (resulting from the outbreak of war) prevailing during the latter part of the year undoubtedly exercised some influence in producing this result, but since 1909, even in normal years, the marriage rate has shown a gradual recovery from the low level reached in 1908. The birth rate, which failed in 1913 for the first time since 1903 to show a decline on the rate of the preceding year, again showed diminution during 1914, being 24.3 per thousand persons living, as compared with 24.5 per thousand in 1912 and 1913. The maximum birth rate was attained in 1876, the year preceding the fall in the marriage rate. The death rate (14.4 per thousand living) shows a slight increase on the rate for 1913. This rate has fluctuated considerably in the last decennium, reaching as high a figure as 15.8 in 1906, and falling as low as 13.6 in 1912, in which year the rate was the lowest ever recorded for London. The present rate, however, compares very favorably with the rates (exceeding 20 per thousand) in the years preceding 1890. The infant mortality rate (104 per thousand births) is slightly lower in 1913, but exceeds considerably the very low rate of 1912 (91 per thousand births). In the earlier year, it is to be observed that the summer temperature was below the average, while the rainfall, especially during the month of August, was above the average. Probably this fact had its effect on the mortality from diarrhea, for the deaths were only half as numerous in 1912 as in 1913 or 1914. Seventy-three cases of cerebrospinal fever were notified as against ninety-two in 1913. It may be stated as the outcome of investigation that the number of instances in which sufferers from cerebrospinal fever have been found to have been coincidently affected by influenza is far higher than would have been anticipated had the association been merely a matter of chance.

A Pharmacist's Fatal Mistake

The tragic blunder of a pharmacist, who in dispensing mistook strychnin for butylchloral hydrate, caused the deaths of two women. At the coroner's inquest this extraordinary mistake was attributed to nerve strain due to overwork in dispensing an enormous number of prescriptions under the insurance act.

BERLIN LETTER

BERLIN, March 30, 1916.

Martial Law and Public Health Work

Public health work has benefited from the supervision and direction of health matters by the military authorities. Although this work, so far as the military is concerned, was primarily done in behalf of the latter, the civil population was also benefited. The measures taken against the use of alcohol serve as an illustration. The excessive consumption of alcohol had a bad influence on the soldiers on furlough and particularly on the convalescents who were permitted to leave the hospital. In February, 1915, a general military order was issued prohibiting the sale of whisky, liquors, etc., to any one attached to the army. Later brandy was included, and the sale of any liquor to the civil population after 9 o'clock in the evening was also forbidden. In Muenster the sale of any spirituous liquors is forbidden on Sunday, Monday, legal holidays and the next following workday. On the remaining days the sale of such potables is permitted only between the hours of 11 a. m. and 7 p. m. Purchases made at that time must be paid for in cash and consumed at once. Spirituous and vinous liquors of all kinds may not be sold otherwise (in bottles), except by the wholesale trade or for medicinal and similar purposes.

Orders were also issued to control the spread of venereal diseases. By order of the commandant (April, 1915), prostitutes were forbidden to enter military camps, training fields and the surrounding districts. Von Hindenburg went further than this in the district under his command. Any woman who knew that she was infected and cohabited with either the male civil or military population was imprisoned for from two to twelve months. If desired by the authorities, military detention and military treatment may be instituted.

Prophylactic or immunizing vaccination against smallpox, cholera and typhoid was made obligatory and met some opposition from the antivaccinationists which was met promptly by military orders. The commandants prohibited the distribution of all antivaccination literature and suppressed propaganda. Similar measures were taken against quackery. Advertising and circularizing in the interests of any agent for which extravagant claims were made or which was deleterious to the health of the people was forbidden. In Wurttemberg the commandant went even further. He forbade the public advertising by the laity of any medicinal agent or remedy for the treatment of disease, or drugs, apparatus and appliances intended to cure or give relief from disease, unless permission to do so was granted by the medical authorities. No public notice can be given of any agent intended to abort the pregnant or to regulate menstrual disturbances. The laity was forbidden to offer treatment by means of hypnosis or "mystic" measures, or to treat leprosy, cholera, typhus, yellow fever, plague, smallpox or other infectious diseases, venereal diseases or cancer, or to administer hypnotics, or to give subcutaneous or intravenous injections. Other commandants did not go so far, but contented themselves with forbidding the public announcement of methods of cure and apparatus intended to alleviate or cure. These measures, one and all, cannot fail to be productive of great good because the prohibition of public advertising will keep the public from the quack. The layman has his attention called to quackery by the newspapers; in the absence of quack advertisements he is saved from the quack.

By discrediting regular medical practice, the quacks have succeeded in getting patients, therefore the distribution of dodgers and circulars addressed to the laity and belittling and discrediting medical practice is strictly forbidden under pain of imprisonment not to exceed one year. Nonmedical persons are forbidden to treat venereal diseases or to advertise a remedy for such diseases. In Berlin the police are even authorized to remove such signs from the houses. The traffic in agents intended for the prevention of conception and to produce an abortion is strictly prohibited. In Schleswig-Holstein special mention is made of stem pessaries and some vaginal douche apparatus. Even their use is forbidden unless ordered in writing by a physician. No one is permitted to give any "advice to ladies" or to make offers of assistance, for pay or gratuitously; in fact, anything and everything which is intended to prevent conception or to produce an abortion comes under the ordinance of prohibition (*verboten*) and is punishable by imprisonment. In some districts the newspapers are forbidden to carry such advertising. Every effort is being made to protect the general public as well as the military against quacks and quackery.

PARIS LETTER

PARIS, April 6, 1916.

The War

METAL OR CARTILAGINOUS PLATES IN CRANIOPLASTY

At a recent session of the Société de chirurgie de Paris, Dr. Pierre Duval, of the Faculté de médecine de Paris, reported 18 cranioplasties which he had performed up to the present for wounds of war. In 9, he used metal (aluminum) plates, and in 8, cartilaginous plates, following the method of Morestin. There was no difference in results between the metallic and the cartilaginous cranioplasties. Notwithstanding, Duval prefers the latter because the technic is much simpler and more rapid and it has the immense advantage of not leaving metallic foreign bodies in the tissues, which invariably have been infected. There is, perhaps, one class of cases in which the metal plate should be preferred; these are the cases in which much substance has been lost. There still remains the question of the operative indications for cranioplasty. Being a protective operation simply, it should be performed when the patient suffers from contact of his brain with the scar or is obsessed by fears of complications from this contact.

Dr. Capitan of the Collège de France and Dr. Delair have recently reported to the Académie de médecine an interesting case in which the loss of a large amount of the cranial vault was supplied by a gold plate. A patient died at the Bégin hospital in Capitan's service; necropsy showed a perforated gold plate under the skin of the head in the left temporoparietal region. Capitan found that the patient had been trephined by Dr. Schwartz in 1904, after a fall from a bicycle, and, having had epileptiform attacks later, was again trephined by Dr. Sebileau. A final operation, performed by Dr. Delair for the purpose of entirely dispelling the epileptic attacks, consisted in the insertion, for the protection of the brain, of the gold plate which was discovered at necropsy.

GOOD RESULTS OF NONOPERATIVE TREATMENT OF ABDOMINAL WOUNDS

Dr. Chevassu of the Faculté de médecine de Paris has presented to the Société de chirurgie de Paris an interesting report on 210 cases of abdominal wounds observed within a period of fifteen days in a surgical automobile ambulance. Where abdominal wounds are concerned, Chevassu was originally a believer in operation. Necessity compelled him to practice abstention. Being overwhelmed by the number of dangerously wounded men continually brought to him, he was compelled to take the more urgent cases, that is, to save limbs and to refrain from abdominal operations which take so long to perform and are at best uncertain as to the outcome. Examining the cases of abdominal wounds some days afterward, he was much pleased to find unexpectedly good results. These facts were the more impressive because they seemed to contradict current ideas. To appreciate the value of results obtained by Chevassu, it is necessary to consider only intraperitoneal wounds. Out of 210 cases in his statistics, there are 136 of this class with 57 dead and 79 discharged, or a death rate of 41.91 per cent. In the 57 fatal cases, 27 patients, or 47.36 per cent., had been operated on; 28, or 47.36 per cent., had not been operated on; 3, or 5.26 per cent., were operated on late. Out of the 79 discharged patients, 66 had had no operation, 13 had been operated on. The patients who had not been operated on were treated by immobilization, a strict diet, and morphin, and, in cases of pronounced shock, by injection of artificial serum and camphorated oil. The particularly interesting point is that out of 40 cases of wounds of the small intestines, operations have been performed in 8 with 5 deaths (a mortality of 62.5 per cent.); in 32 cases, there have been no operations and there were only 6 deaths (a mortality of 18.75 per cent.). The last-mentioned facts in particular, so at variance with the observations of most military surgeons, converted Chevassu from a noninterventionist by necessity to a noninterventionist by conviction.

Dr. Tuffier of the Faculté de médecine de Paris, who was commissioned to make a report on the work of Chevassu, did not declare himself convinced, for, out of the 32 cases of wounds supposed to involve the small intestines, he regards only 16 as absolutely certain. This is half the whole number and this half includes the 6 deaths, making a mortality of 37.25 per cent. and 62.75 per cent. of the recoveries. This is a high percentage of recoveries, very impressive in itself, but, in Tuffier's opinion, not sufficient to decide the question as between operation and nonoperative treatment. It may, in open warfare (a war of movement), justify the course of the surgeon in an ambulance encumbered by patients or in circumstances which do not permit laparotomies. It will not prevent the surgeon who is well supplied with equipment and assistants, especially under stationary conditions, from continuing to give the preference to laparotomy, which does not affect prognosis unfavorably when the condition of the patient, the material circumstances and the experience of the operator permit it.

ARE FRAGMENTS OF SHELLS SEPTIC WHEN BURIED IN CICATRIZED WOUNDS?

When fragments of shells remain imbedded in the tissues, and the wounds which have been produced are completely cicatrized, presenting no signs of inflammation, are these fragments septic or not? Dr. Prat asked this question before the Société de chirurgie de Paris. In 17 cases of this nature, in 2 of which each patient had 2 operations in different regions (that is, in 19 wounds) he had cultures made from the fragments of shells extracted; 10 were sterile and 9 positive. Of the 9 positive cultures, 2 gave a single bacterium each, 5 had 2 each, and 2 had 3 each. The germs were quite various: streptococci and staphylococci, diplococci, the *Micrococcus tetragenus*, motile bacilli taking the Gram stain, long fusiform bacterial filaments, but chiefly unidentified.

Following these operations, Prat had reunion by first intention without suppuration except in 2 cases in which the cultures from the shells were positive. Perhaps these 2 cases should be interpreted as a reawakening of latent infection. In short, in more than half the cases, the projectiles buried in the tissues after cicatrization of the wound which they produced were sterile. Those which were not sterile were very slightly septic, and this slight degree of infection in most cases did not prevent reunion by first intention without drainage of the wounds made in order to extract them. This tends to prove that the danger of infection from fragments of shells buried in the tissues after the wounds have cicatrized is not an argument for the extraction of these fragments.

DISINFECTION OF THE CLOTHING OF SOLDIERS

M. Fernand Gand has just proposed to the Académie des Sciences the use of the ordinary commercial solution of formaldehyd poured into a saturated solution of potassium permanganate for the disinfection of the clothing of soldiers. The solution rapidly becomes hot and gives off abundant vapors of great disinfecting power which rapidly penetrate the cloth. A very simple apparatus is sufficient for the use of this method. A large cask may be used for the disinfecting chamber, and a small cask joined to the other by a pipe will serve as a generator.

Improvement of the Serotherapy of Cerebrospinal Meningitis

Because antimeningococcus serum acts especially through immediate contact with meningeal pus, Dr. Félix Ramond recommends that, after the serum has been injected, the patient should be placed in the ventral position with the pelvis raised high and the head lowered. This position should be kept for from 20 to 30 minutes according to the patient's tolerance, and then the patient should be placed in the dorsal position with the same inclination for the same length of time. Thus the serum will bathe alternately the anterior and posterior purulent confluents of the medulla oblongata, the cerebellum and the cerebrum. In cases of localized meningitis especially at the summit of the cerebral cortex, Ramond believes that, six or eight hours after the injection of the serum, it is well to raise the patient's head as much as possible for several hours, in order to permit the pus in the head to descend, experience having shown that the serum reaches the base and the sides of the brain much more easily than the upper portions.

Dr. Marcel Labbé of the Académie de médecine and Drs. Zislin and Cavaillon have observed that in some cases of cerebrospinal meningitis, intraspinal injection has proved insufficient because of the various septa which prevent the serum injected into the spinal canal from passing into the brain and acting on the cerebral lesions. In such cases, Labbé, Zislin and Cavaillon believe that there should be no hesitation in trephining and injecting the serum directly into the ventricles. This operation is well tolerated and gives excellent results, as they have observed in several cases.

A Fatal Case of Meningitis from Mumps

I mentioned in a previous letter (THE JOURNAL, March 18, 1916, p. 905) a complication of mumps to which Dr. Noel Fiessinger called attention. Dr. Fiessinger observed five deaths in a series of 40 cases. Dr. Roger Voisin has recently reported to the Société médicale des hôpitaux de Paris a case of meningitis from mumps terminated by death, the diagnosis of which was confirmed by the evolution of the parotid swelling and by the results of lumbar puncture. The patient died in three days, the case thus being an exception to the usually benign course of ordinary cases of meningitis from mumps. The meningitis in Voisin's patient seems to have preceded the parotid inflammation. The alcoholic antecedents of the patient may to some extent explain the rapid death.

Marriages

ASST. SURG. ELPHÉGE ALFRED MAILLIOT GENDREAU, U. S. Navy, to Miss Josephine M. Maddox of Fredericksburg, Va., in Washington, D. C., April 13.

MACHEN TADENCE MOORE, M.D., Greenville, S. C., to Miss Mary E. Trenholm of Charleston, S. C., April 15.

WILLIAM ALBERT FENNER, M.D., Detroit, to Miss Gizella Alsojarai Csanyi Kovach, at Detroit, April 26.

LOUIS BERNARD KNECHT, M.D., Poplar Bluff, Mo., to Miss Lottie Oughton of Belleville, Ill., April 19.

Deaths

Traverse Rocke Maxfield, M.D., Brooklyn; Michigan College of Medicine, Detroit, 1884; aged 53; formerly a member of the Medical Society of the State of New York; sanitary superintendent of the Brooklyn Sanitary Bureau of the Health Department from 1906 to 1908 and since that time head of a special bureau of hygiene for the investigation of diseases of children and sanitary and medical work in the schools; for eighteen years a member of the staff of the Health Department; a veteran of the Spanish-American War in which he served as major-surgeon; died at his home in Brooklyn, April 23, from acute gastritis.

Edgar Wachtel Palmer, M.D., Greencastle, Pa.; Baltimore Medical College, 1902; aged 46; a Fellow of the American Medical Association; formerly editor of the Greencastle *Echo-Pilot;* a member of the staff of the Chambersburg Hospital and assistant secretary of the Cumberland Valley Medical Association; president of the Greencastle School Board; died in the Chambersburg Hospital, April 17, three days after an operation for appendicitis.

Henry Altamont Moody, M.D., Mobile, Ala.; University of Louisville, Ky., 1866; aged 74; formerly a Fellow of the American Medical Association; a member and once president of the Medical Association of the State of Alabama; professor of therapeutics, materia medica, and pharmacognosy in the Medical Department of the University of Alabama, Mobile; associate editor of the *Southern Medical Journal;* died at his home in Mobile, April 16.

Robert Wray Stewart, M.D., Pittsburgh; Bellevue Hospital Medical College, 1887; aged 54; formerly a Fellow of the American Medical Association; a member of the Medical Society of Pennsylvania; at one time professor of surgery and clinical surgery in the University of Pittsburgh and for many years a member of the staff of Mercy Hospital; who went to Switzerland three years ago on account of ill health; died in Berne, Switzerland, April 17.

Henry Chandlee, M.D., Baltimore; University of Maryland, Baltimore, 1882; Hahnemann Medical College, Philadelphia, 1883; aged 62; formerly roentgenologist of the Kernan Hospital for Crippled Children, Baltimore; a member of the Medical and Chirurgical Faculty of Maryland and secretary of the Roentgenological Society of Baltimore; died in the University Hospital, Baltimore, April 20, from septicemia following a carbuncle.

Henry Yandell, M.D., Laconner, Wash.; University of Louisville, Ky., 1856; aged 82; surgeon in the Confederate service during the Civil War; for thirty years a practitioner of Yazoo City, Miss.; since 1889 a resident of the Pacific Coast; and until two years ago, surgeon in the United States Indian Service on the Snohomish Reservation; for two terms coroner of King County; died at the Mason Sanitarium, Seattle, April 14.

Richard Stein, M.D., New York City; University of Berlin, Germany, 1884; aged 54; a Fellow of the American Medical Association and New York Academy of Medicine; a member of the New York Pathological Society; visiting physician to the German and Lebanon hospitals; while reading an address before the New York Academy of Medicine, April 26, dropped dead from cerebral hemorrhage.

George William Derrick, M.D., Norwood, Mass.; Tufts College Medical School, Boston, 1903; aged 38; health officer and a member of the Board of Health of Norwood; formerly a member of the Massachusetts Medical Society; died, April 16, in the Brooks Hospital, Brookline, Mass., from septicemia, following a prick from a needle a week before.

Albert Manley Ballard, M.D., Asheville, N. C.; Harvard Medical School, 1868; aged 74; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of North Carolina; for thirty-five years a practitioner of Asheville; died at his home, April 14, from pneumonia.

Samuel Whitefield Stevenson, M.D., Mooresville, N. C.; Washington University School of Medicine, Baltimore, 1873; aged 72; formerly a member of the Medical Society of the State of North Carolina; who represented Iredell County in the state legislature in 1901 and 1903; died at his home, April 15.

Nathan Rice Simmons, M.D., Lexington, Ky.; Long Island College Hospital, Brooklyn, 1864; aged 73; a Fellow of the American Medical Association; for thirteen years health officer of Lexington, Ky.; a Confederate veteran; died at the home of his sister in Louisville, April 21, from pneumonia.

Andrew J. Richardson, M.D., New York City; New York Homeopathic Medical College, 1870; aged 68; a member of the staff of the Hahnemann Hospital and the Yorkville Dispensary and consulting physician to the Baptist Home for the Aged; died at his home, April 17, from heart disease.

Thomas J. Wills, M.D., Washington, Ga.; Atlanta (Ga.) Medical College, 1887; aged 53; a Fellow of the American Medical Association; formerly president of the Eighth District Medical Association; one of the best known practitioners of northern Georgia; died at his home, April 13.

John Ferdinand Bates, M.D., Setauket, N. Y.; Berkshire Medical College, Pittsfield, Mass., 1860; aged 81; formerly a Fellow of the American Medical Association; for more than half a century a practitioner of Setauket, L. I., N. Y.; died at his home in East Setauket, April 19.

Cyrus N. Harold, M.D., Indianapolis; Physio-Medical College of Indiana, Indianapolis, 1879; aged 60; president of the faculty and professor of gynecology and clinical medicine in his alma mater; died in Rochester, Minn., April 19, a week after a gastro-enterostomy.

Allen Smith Chatterton, M.D., Peterson, Iowa; University of Iowa, Iowa City, 1882; aged 60; a Fellow of the American Medical Association; for thirty years a practitioner of Iowa, who had been ill with nephritis for a long time; died at his home from uremia, April 12.

Vance Ludowick Price, M.D., New York City; University of Virginia, Charlottesville, 1915; aged 30; an intern in the New York City Hospital at Blackwells Island; died in that institution, Dec. 24, 1915, from general peritonitis, the result of intestinal obstruction.

George Hagope Godson, M.D., Harmon-on-Hudson, N. Y.; New York University, New York City, 1892; aged 54; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of New York; died at his home, April 22.

Abraham Herzlich, M.D., New York City; University and Bellevue Hospital Medical College, 1905; aged 32; assistant surgeon to the Hospital and Dispensary for Deformities and Joint Diseases; died at the home of his brother in New York City, about April 17.

G. W. Walker, M.D., Waxahachie, Tex.; Medical College of Georgia, Augusta, 1856; aged 80; surgeon in Hilliard's Legion of Alabama in the Confederate service during the Civil War; died at his home, February 23, from senile debility.

William Patrick McDermott, M.D., Los Altos, Calif.; University of California, San Francisco, 1874; aged 72; surgeon to the Pacific States Telephone and Telegraph Company, San Francisco; died suddenly at his home, April 16, from heart disease.

David G. Mortland, M.D., Edgerton, O.; Medical College of Ohio, Cincinnati, 1879; aged 67; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; died at his home, April 11, from heart disease.

George Wylie Cliness, M.D., Tulsa, Okla.; Miami Medical College, Cincinnati, 1905; aged 41; who had been ill in the Good Samaritan Hospital, Cincinnati, for several weeks; died at the home of his sister-in-law in Wilmington, Ohio, April 2.

Luther Orrin Martin, M.D., Springfield, Mass.; College of Physicians and Surgeons in the City of New York, 1875; aged 63; for twenty years a practitioner of Denver; died at his home in Springfield, February 26, from chronic nephritis.

Ferdinand Engelbrectson, M.D., Chicago; Dearborn Medical College, 1907; aged 53; a Fellow of the American Medical Association; associate surgeon for the Rock Island System; died at his home, April 23, from heart disease.

J. R. McFadden, M.D., Milford, Tex.; Medical College of the State of South Carolina, Charleston, 1859; aged 81; a brigade surgeon in the Confederate service during the Civil War; died at his home, February 6, from senile debility.

David Choate, M.D., Salem, Mass.; Harvard Medical School, 1854; aged 87; a member of the Massachusetts Medical Society; at one time city physician and a member of the school board of Salem; died at his home, April 23.

Archimides S. T. Keever, M.D., Newark, N. J.; St. Louis College of Physicians and Surgeons, 1883; aged 52; died in St. Michael's Hospital, Newark, April 7, from bronchitis.

Charles S. Meahl, M.D., Buffalo, N. Y.; University of Buffalo, 1890; aged 47; for several years examiner in lunacy for the city of Buffalo and city diagnostician; died at his home, April 17, from disease of the liver.

William R. Keve, M.D., Dayton, O.; Medical College of Ohio, Cincinnati, 1880; aged 72; for many years a practitioner of Piqua and Sidney, O.; died in St. Elizabeth's Hospital, Dayton, April 10, from pneumonia.

Thomas C. Moore, M.D., Smyrna, Del.; Hahnemann Medical College, Philadelphia, 1884; aged 61; a member of the Delaware Legislature in 1905 and 1907; died at the home of his sister in Cheswold, Del., April 12.

John Alexander Gunn, M.D., Des Moines, Iowa; University of Michigan, Ann Arbor, 1875; aged 66; was stricken with cerebral hemorrhage while on the street, April 14, and died at his home the next morning.

Joseph Shimoon, M.D., Urmi, Persia; Jefferson Medical College, 1903; a medical missionary; is reported to have been beheaded and his body burned at the stake by Turks at his home in Urmi, recently.

William I. Wolpert, M.D., Elizabeth, Ind.; Louisville Medical College, 1886; aged 56; for twenty-five years a practitioner and druggist of Elizabeth; died at his home, April 18, from cerebral hemorrhage.

Albert Francis Murch, M.D., Westbrook, Me.; Medical School of Maine, Brunswick, 1882; aged 69; a member of the Maine Medical Association; died at his home, January 27, from cerebral hemorrhage.

Oliver M. White, M.D., Highland, Tenn.; University of Tennessee, Nashville, 1889; aged about 50; died recently at Dyers, Tenn. His death is believed to have been due to suicide by strangulation.

DeWitt Hitchcock, M.D., Oxford, N. Y.; New York University, New York City, 1877; aged 66; died in a hospital in Binghamton, N. Y., April 9, after an operation for the removal of gallstones.

Charles Dillon Stevens, M.D., St. Louis, Mo.; Washington University, St. Louis, 1878; aged 63; a member of the Missouri State Medical Association; died at his home, April 9, from arteriosclerosis.

George Finis Weaks, M.D., Water Valley, Ky.; University of Nashville, Tenn., 1875; aged 61; president of the Citizens' Bank of Water Valley; died at his home, April 14, from disease of the stomach.

James Thomas Owen, M.D., Cloverport, Ky.; University of Louisville, Ky., 1867; aged 76; for forty-five years a practitioner of Breckinridge County; died at his home, April 12.

John Kennedy, Paragon, Ind. (license, Indiana, 1897); aged 82; health officer of Paragon; died at his home, April 19, from the effects of injuries received in a fall two months before.

Emil Franz Williams, M.D., Bay Settlement, Wis.; University of Louvain, Belgium, 1879; aged 58; while driving his automobile in Green Bay, April 13, died from heart disease.

Edward Kelley, M.D., Trenton, N. J.; Baltimore University, 1887; aged 62; for a time city physician of Trenton; died in St. Francis' Hospital in that city, April 6, from typhoid fever.

Solomon Samuel Kohn, M.D., Boerne, Tex.; Dartmouth Medical School, Hanover N. H., 1892; for many years a practitioner of St. Louis; died at his home in Boerne, April 7.

John Sinclair, M.D., Minneapolis; University of Toronto, Ont., 1866; Bellevue Hospital Medical College, 1866; aged 80; died at his home, April 6.

Samuel B. Howard, R.F.D. Salem, Ind. (license, Indiana, 1897); died at his home near Plattsburg, Ind., April 4, from malignant disease of the face.

Arthur Hiram Smith, M.D., Orland, Ind.; Kentucky School of Medicine, Louisville, 1898; aged 53; died in a hospital in Fort Wayne, about April 10.

James Sanford Preston, M.D., Armstrong, Mo.; St. Louis Medical College, 1867; aged 73; died at his home, March 2, from general debility.

Thomas Sims Holleyman, M.D., Covington, Ga.; Atlanta, Ga., Medical College, 1894; aged 49; died suddenly at his home, April 9.

John Watkins Culver, M.D., Jersey City, N.J.; New York University, New York City, 1895; died at his home, April 12.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE WINE OF CARDUI SUIT

(*Continued from page 1418*)

April 14, 1916, Afternoon

Court met pursuant to adjournment. Dr. Edward E. Montgomery resumed the stand as witness for the defendants.

DIRECT EXAMINATION BY MR. T. J. SCOFIELD (*continued*)

Dr. Montgomery testified that in the curing of displacements of the uterus he uses mechanical, hygienic and operative methods. Describing displacements he referred to the diagram previously identified by other witnesses. He testified that the hypothetical medicine such as was described would not be indicated in displacements. He also described what was understood by sterility.

He testified that it would be impossible for the hypothetical medicine to serve any useful purpose in the treatment of sterility or of inversion of the womb. He described inflammations of the female genital tract, including pyosalpinx. He testified that it is utterly impossible for the hypothetical medicine previously described to restore to health a patient suffering with this disease. He described menorrhagia and metrorrhagia and testified that no beneficial result can be obtained by the medicine in these conditions. Mr. Scofield read from the Ladies' Birthday Almanac.

Mr. T. J. Scofield: Q.—Now, the quotation: "Flooding is always a sign of danger. The best treatment is complete rest in bed and Wine of Cardui three times a day."

The Witness:—I am perfectly willing to accept the rest in bed.

Q.—Well, how about the rest of it? A.—I should feel that you are doing the patient an injury.

Mr. Hough:—I ask that that response be stricken out, as the witness has not said he knew anything about Wine of Cardui at all. Wine of Cardui has not been mentioned to him.

Mr. T. J. Scofield:—Well, I have got to ask another question.

THE COURT:—Substitute your hypothetical medicine, Mr. Scofield. Strike that answer out.

Mr. T. J. Scofield:—Yes.

Q.—Assume now, Doctor, that the hypothetical medicine which I described to you a while ago corresponds approximately to Wine of Cardui, what is known as Wine of Cardui, then would you have an opinion as to whether the best treatment in such case is complete rest in bed, and the hypothetical medicine, or Wine of Cardui? A.—I have.

Q.—What is that opinion? A.—My opinion would be that administration of such a remedy would be detrimental to the patient.

Dr. Montgomery described dysmenorrhea and amenorrhea and stated that the treatment of these symptoms was the treatment of the disease causing them.

THE COURT: Q.—And the remedy depends, not on the symptom, but on the source of the trouble? A.—That is right.

Mr. T. J. Scofield: Q.—Now, then, Doctor, have you an opinion as to whether or not the hypothetical medicine to which I have called your attention will cure these conditions? A.—I have.

Q.—What is that opinion? A.—Why, I think that no remedy ought to be considered as a routine method in any case. That the patient ought to be treated according to the conditions that exist in that individual, and I can conceive of no condition in which this remedy would be desirable to use.

PUBERTY AND PREGNANCY

The witness then described puberty as a normal, physiologic process, and considering the use of the hypothetical medicine stated:

The Witness: A.—To give a girl who is undergoing a physiological process, to say that she must take some medicine, and a medicine which contains alcohol or any habit-forming drug at this period of her life, which is the most impressionable period of her existence, is doing that which is placing her future in peril, and is without any possible benefit. Indeed, every scientific physician endeavors to realize that his patient is in need of a drug before he administers it, and it makes no difference how potent the drug may be, he would not give a drug to a patient unless he felt that it was required.

Mr. T. J. Scofield: Q.—Doctor, what is your opinion, if you have an opinion on the subject, as to whether or not a pregnant woman should use such a hypothetical medicine as I have described to you, during the whole term of pregnancy, and whether it is a fact that such

medicine can never do anything but good? Have you an opinion upon that? *A.*—I certainly have.

Q.—What is that opinion, doctor? *A.*—My opinion is that such a medicine could not do anything but harm. The woman, because she is pregnant, which is a physiological process, does not need medicine. She does need attention. She does need to be under supervision, either of herself or others, because she is doing the work of two people. Her processes of elimination have to take care of those of her own, and those of her offspring, and it is consequently important that the woman's secretions should be looked after, and that she should receive proper treatment if conditions require, but not otherwise.

Q.—Doctor, do you believe that such a medicine as I have described, the hypothetical medicine, if taken during pregnancy, will make childbirth easy? *A.*—I do not.

Q.—What is your opinion with reference to a pregnant woman taking such a medicine as I have described hypothetically, and which contains 48 drops of pure alcohol to each dose, during the whole term of pregnancy? *A.*—As I said before, the woman during this period of time has increased demands upon her eliminative organs. Those organs particularly are the kidneys. Women suffer more frequently from kidney disease, from albuminuria, which is a leakage of the albumin in the body, during this time. Now the remedy, or the drug which has more influence and is of greater danger in the development of such conditions is alcohol, and in my judgment of this drug the only active principle in the doses given is the alcohol, and alcohol would be certainly detrimental to a woman to be given during all this period of time.

Mr. Hough:—I ask that that be stricken out on the ground that he is assuming something contrary to what he was asked in the hypothetical question, which is, that the ingredients, other than alcohol, have some medicinal purpose.

THE COURT:—Yes, that may be stricken out. You were asked to assume that it did have certain active principles.

The Witness:—I see.

Mr. T. J. Scofield:—That is, that part of it in which he refers to the alcohol as the sole medicinal element in the medicine?

THE COURT:—Yes.

Mr. T. J. Scofield:—Just that part of it.

Q.—Now then, Doctor, I will ask you the question again, because I don't want any misunderstanding about it. What is your opinion in reference to a pregnant woman taking such a medicine as I have described, and which contains 48 drops of pure alcohol in each dose, during the whole term of pregnancy? *A.*—I would say that it is very undesirable that it should be done. And I love my profession. I am—

Mr. Hough:—I object to this.

THE COURT:—Oh, you have answered the question.

The Witness:—All right.

The menopause was defined and the witness stated that the hypothetical medicine could not be of service at this time of life. The witness was asked whether there might be any "danger at this period of life in giving a medicine to relieve the patient at that time from symptoms or conditions, or disguising and covering up a malignant condition, or any other disease." Mr. Hough objected to the question, the Court ruling that whereas a statement appears in one of the books to the effect that "the taking of this medicine can do nothing but good" evidence to the effect that the medicine might do harm was admissible. The witness then testified that the medicine could not affect malignancy and would prevent the patient from securing early treatment.

CROSS-EXAMINATION BY MR. HOUGH

On cross-examination the witness testified that he knew nothing by experience of carduus benedictus. He has heard of the drug and has read something about it. The witness was asked what he had read in books. Objection was made to the question. The Court ruling:

THE COURT:—Right or wrong, I have ruled that the books have no place here to check up on a witness, unless the witness says that he has read the books and relied upon the books for his information.

Mr. Hough: *Q.*—Do you remember how many books you read on that subject? *A.*—I enumerated them, the United States Dispensatory—

Q.—Those are all that you can recall? *A.*—The National Dispensatory, Scudder's Therapeutics and King's American Dispensatory.

Q.—Are they considered respectable medical works? *A.*—Yes, they are respectable.

Q.—When you say they form the basis of your opinion, do you mean that they state what you state about the medicine? *A.*—I said that the consensus of opinion that I obtained from reading those books, gave me the impression that it was a medicine of no great value. It is—when a medicine has—the different editions of the United States Dispensatory, the National Dispensatory and books of that kind, when they give nothing that has been done later than investigations of a drug—later than 1843, I am not inclined, as a scientific man, to feel that I want to waste my time, nor the interests of my patient by the employment of such a drug.

The witness testified that he has never used Wine of Cardui in his practice, and that he abandoned the use of viburnum prunifolium twenty-five years ago.

Q.—Why did you put it in your book, recommending it for some of these conditions in 1912? *A.*—Read it, will you please.

Q.—Do you say you did not put it in your book? *A.*—No, I did not. I asked you to read what I said.

Q.—Do you mean you don't know whether you put it in your book or not? *A.*—I know it is in my book.

Q.—Why did you put it in your book recommending its use?

Mr. T. J. Scofield:—That is objected to.

The Witness:—Please read what I said.

Mr. T. J. Scofield:—They have got the book right there.

THE COURT:—Show him what he said.

Mr. Hough:—(Reading) "Dysmenorrhea." (This is page 194). "Baths and drinking of salt water, the fluid extract of hydrastis, canadensis, 20 to 30 drams," I believe that means "should be administered three times daily in black coffee, beginning eight to ten days before the expected period. This plan of treatment, regardless of the supposed cause—regardless of the supposed cause of the dysmenorrhea, is beneficial. Hydrastis, extract cotton root, extract viburnum prunifolium, stypticin and ergot have all been found to give relief." *A.*—Well, now, that—in writing a book a man endeavors not only to use his own experience, but in deference to what other men say, that expression was used. But if you will turn to an earlier page of that book where it speaks of abortion, you will find what I say as to my own individual experience.

Q.—You stated that in your book in 1912, didn't you? *A.*—I did.

Q.—After you said that you had abandoned its use 25 years ago? *A.*—I did.

Q.—Now, Doctor— *A.*—I also stated in the book that I had used it in abortion.

Q.—You had used it in some other cases, without getting good results? *A.*—Yes.

Q.—I am not asking you about the other cases. Do you do more therapeutic work or surgical work? *A.*—My work is largely surgical.

ALCOHOL IN MEDICAL PREPARATIONS

Dr. Montgomery again described the type of his practice. He stated that he has sometimes seen good results following giving of medicine by mouth. He is a prohibitionist. He gives medicines containing alcohol.

Q.—What medicines did you give, or do you give in these conditions that contain alcohol now? *A.*—Well, I would not hesitate to give ergot.

Q.—How much alcohol is there in ergot? *A.*—Why, there is about 30 drops to the teaspoonful.

Q.—Thirty drops to the teaspoonful? *A.*—Yes, sir.

Q.—That would be 120 drops to a tablespoonful? *A.*—Yes.

Q.—What percentage of alcohol is there in the ergot, expressed in percentage?

THE COURT:—Haven't you got your drops too many?

Mr. Hough:—Four teaspoonsful to the tablespoonful, 30 drops to the teaspoonful, that is 120.

THE COURT:—I thought you had it two teaspoonsful to the tablespoonful. I was wrong.

The Witness:—I do not know the—

Mr. Hough:—The percentage of alcohol? *A.*—I do not know the exact percentage, no.

Q.—You regard the alcohol as negligible, that is the reason you pay no attention to it? *A.*—Well, alcohol in ergot—in the first place, ergot is not a remedy I would advise to be used for a long period of time. The alcohol in the ergot is counteracted, in the extract of ergot, is counteracted by the ergot itself.

Q.—You mean the effect of the alcohol is counteracted by the medicine that is in it? *A.*—Yes, sir, alcohol is a dilator and ergot is a constrictor.

Q.—How do you know that that is not the case in every other medicine that contains alcohol? *A.*—I would not know it, unless the medicine had been investigated.

Q.—What investigations have demonstrated that the alcohol in the fluidextract of ergot has no effect whatever? *A.*—I am unable to give you when the investigations were made, or what investigations have been made. I am simply giving you the action of the two drugs as the physiological action which has been determined by investigation, and in a long period of time.

Q.—You don't know of any treatise or work on that subject, any statement of any book or periodical where that statement is made, that the ergot in the fluid extract prevents the alcohol from having the usual alcoholic effect? *A.*—I cannot give you the—

Q.—But you know that there is a book somewhere.

Mr. T. J. Scofield:—I object to that, if the Court please.

THE COURT:—He has not said that yet. If he does, he may say so. Do you know of any such book, Doctor?

To which ruling of the Court the defendants, etc., excepted.

A.—I do not know. I cannot give the—I cannot give the book which mentions it.

Mr. Hough: *Q.*—Are there any other drugs that you know of that counteract the effect of the alcohol in which they are given? *A.*—There are other drugs which the individual—there would be no danger of the individual forming the—

Q.—I am not talking about that. I am talking about a drug which will counteract the effect of the alcohol. *A.*—Any drug that acts in a different way from alcohol will counteract it.

Q.—Any drug that acts in a different way from alcohol, will counteract the effect of the alcohol? *A.*—Yes, sir.

MEDICINES IN TREATING UTERINE PROLAPSE

The witness was then asked concerning his treatment of prolapsus. He stated that if the patient's condition required it, he would give a tonic.

Q.—What are your favorite tonics for such conditions? *A.*—Arsenic, quinin, strychnin; the lactophosphates of lime and the iron preparations.

Q.—There are a very large number of tonics mentioned in medical works and known by physicians for these conditions, are there? *A.*—Yes.

Q.—Other than those that you have named? *A.*—Yes.

Q.—With that treatment, would you ever suggest any cleansing process, douches, or anything of the kind? *A.*—Of course I would.

Q.—What? *A.*—I would, yes.

Q.—An antiseptic douche? *A.*—If conditions required it.

Q.—Usually there is a little inflammation with that condition, isn't there? *A.*—Yes.

Q.—There is very seldom a case that goes to a doctor—I mean of prolapsus—in which there is not some local inflammation? *A.*—Yes. But the inflammatory condition is the result of previous infection. The organisms may have lost their vitality at the time she comes to the doctor and he only has to treat the results of that inflammation.

Q.—But with an inflammation, antiseptic douches would be indicated? *A.*—Keeping the parts clean is an important consideration.

Q.—And if the prolapsus was not too pronounced, and the health of the patient becomes good, the womb would come back and stay back in place? *A.*—If the womb assumes its natural size, and its ligaments are still in a condition that will enable them to support it, the womb will stay in place.

Q.—Now, you give medicines to strengthen the unstriped muscle, don't you? *A.*—Well, not very often.

Q.—Doesn't your book speak of medicines which act on the unstriped muscle? *A.*—Yes.

Q.—Well, that is to strengthen them, isn't it? *A.*—Yes, it strengthens them.

Q.—That is to help the muscle perform its work in holding the womb in place? *A.*—Well, the unstriped muscle in the womb is not likely to be affected by medicine—in the tissues outside the womb, they are unlikely to be affected by medicine and to give medicine in the case of a woman who has prolapsus is just about as reasonable as to give—as to bathe your suspenders with a solution when the elastic tissue has been destroyed from them.

Mr. Hough:—I ask that the illustration be stricken out. It is not responsive.

Mr. T. J. Scofield:—I object to the illustration being stricken out.

THE COURT:—I think it may stand.

To which ruling of the Court the plaintiffs, etc., excepted.

Mr. Hough: *Q.*—Do you mean to say that you treat a woman for prolapsus and then never give her any medicine through the mouth? *A.*—I don't give any medicine, unless there is some condition that requires that.

Q.—But does not that condition usually exist? *A.*—No, not necessarily.

Q.—Well, I don't say necessarily, or not necessarily, but does not it usually exist? *A.*—No.

Q.—Does it ever exist? *A.*—Yes, at times.

Q.—Now, when would you give medicine through the mouth? *A.*—I would give medicine through the mouth when the patient's nutrition was bad; when she had conditions in which there was a desirability of creating an absorption of exudate; of the regulation of her bowels; of considering her general health, building up her general health.

Q.—Or, also, if you wanted to affect the unstriped muscle, wouldn't you? *A.*—I would not give drugs for any conditions of the ligaments of the uterus.

Q.—Well then, why do you recommend drugs in your book for unstriped muscle? *A.*—I do not think I do.

Q.—You don't mention them at all? *A.*—I don't remember having mentioned them for prolapsus of the uterus.

Q.—I am not talking about prolapsus, but the effect on unstriped muscle? *Q.*—Well, the unstriped muscle of the uterus—drugs are given.

Q.—They are given? *A.*—Yes.

Q.—When are they given for the unstriped muscle of the uterus? *A.*—Why, when we wish to stimulate the contraction of the organ.

Q.—Why do you wish to stimulate the contraction of the muscle? *A.*—Well, when the uterus is large, has a fibroid growth for instance, and is enlarged, or when it is—when there is a hemorrhage as to symptom, we would give drugs then with a view to contracting the uterus so as to cut off the blood supply to a certain degree to the organ, and to cut off—to also limit the amount of blood that is sent into it.

The witness then testified as to flexions and versions, the symptoms caused by these conditions and the types of treatment used.

ALCOHOL A FOOD?

Q.—Is alcohol in your opinion ever a food in any proportion? *A.*—Well, it is a food in the sense that it increases oxidization and the burning up, but it is not as satisfactory for that purpose as sugar.

Q.—Is it a fact that alcohol up to 20 per cent. hastens the absorption of drugs? *A.*—I would not like to say as to that one way or the other.

Q.—Did you ever give any medicines in any case of amenorrhea? *A.*—Yes.

Q.—What medicines did you give? *A.*—Why, of course it depends entirely upon what causes the amenorrhea. If the woman is suffering from disturbed internal secretions, defective thyroid, I would give her—give her thyroid extract and give her corpus luteum extract and keep her bowels regular, change her method of life, her diet, encourage her to take more active exercise, baths. Those cases also are benefited at time by the iodids and by arsenic.

Q.—Suppose there was some other cause, what medicines would you use? *A.*—Well, in case of chlorosis, or a person who was in a low state of general nutrition, or one who is suffering from tubercular disease, the remedies that would improve her nutrition.

Q.—You mean that would tone up her general health? *A.*—Tone up her general health.

Q.—And give strength to the uterus, too? *A.*—Well, the uterus is not a factor in that condition. The uterus has not anything to do with the amenorrhea.

Q.—You mean it is just a scarcity of blood, chiefly? *A.*—It is due to the failure of the—especially in the forms of defective internal secretion, it is due to the failure of the blood to descend to the uterus.

Q.—Now, would there be any other causes of amenorrhea for which you would give medicines by the mouth? *A.*—No, I don't think of any.

Q.—Just those two? *A.*—Yes.

DRUGS IN DYSMENORRHEA

Q.—Now, in dysmenorrhea, you give medicines by the mouth for that, do you not? *A.*—I do occasionally, yes, sir.

Q.—You know that other doctors, practitioners generally, give a large number? *A.*—Yes.

Q.—And you know the list of drugs or medicines is rather long for that? *A.*—Yes, I do. Usually, the longer the list, the less valuable the remedies.

Q.—Sir? *A.*—The longer the list usually, the less effective the remedies.

Q.—Where do they commence to depreciate, half way down the list, or not until the end of the list? *A.*—It depends on what you head the list with.

Q.—Well, did you state what medicines you usually give in such cases? *A.*—No, I did not.

Q.—What medicines do you usually give? *A.*—Well, it depends on what I have determined is the cause of the condition. If a woman is suffering from an inflammation, with a marked anteflexion of the uterus, the condition is not usually very much benefited by the administration of medicine. In cases in which the patient is suffering from the effects of toxic products upon the uterus, which have resulted in inflammation in its structure, the employment of the iodids in the intervals of menstruation, and the giving of pulsatilla, and all the remedies which—I cannot think of the names of the drugs.

Q.—Aletris cordial, pulsatilla, and gelsemium? *A.*—I never gave any aletris cordial.

Q.—Liquor sedans? *A.*—I have never given it, but I mean drugs, such as tincture of pulsatilla, some of the drugs that are allied to digitalis which have an influence upon the circulation, I have found of benefit at this period.

Q.—Most of those are in alcohol, are they not? *A.*—Yes, they are, but they are given in such a dose that the alcohol does not affect very much. Then I have given the coal tar preparations at times, simply as—for the sedative influence upon the condition.

Q.—And you also give elixir of calcium lactophosphate? *A.*—I very rarely do.

Q.—As a tonic? *A.*—I suppose it may be found in my book with many other things that I recommended, but I rarely give it.

Q.—You know that contains 20 per cent. alcohol? *A.*—Yes, I know it does.

Q.—And the alcohol in that is negligible, in your opinion? *A.*—I do not give it, I say.

Q.—But I mean, you regarded it as negligible, when you recommended it? *A.*—Well, we have—as I mentioned before, in writing a book, you write for the majority of the profession. We don't always put in just your exact individual opinion only.

Q.—But you would not regard a doctor who used it, as a fraud, would you? *A.*—No, I don't.

Q.—You would not regard a doctor who used any medicine that you name in your book, as a fraud, would you? *A.*—No.

Q.—You would not regard that any doctor who used any medicine named in your book, which contain large amounts of alcohol was a fraud, as being liable to induce a habit, would you? *A.*—Well, not in the doses—in the way that I have recommended it be given in the book.

Q.—You would not think they were practicing a deceit on their patients, in using all those medicines, would you? *A.*—No.

Q.—Now, let us come to menorrhagia and metrorrhagia. What medicines have you ever given through the mouth for those conditions? *A.*—Ergot, quinin, cotton root, stypticin, ustilago maidis, the fungus of corn, styptol, thyroid extract and pituitrin.

Q.—You don't give pituitrin by the mouth? *A.*—No, I beg pardon.

Q.—Now, some of those contain alcohol, and some don't contain alcohol? *A.*—Yes.

Q.—You regard the alcohol as negligible, when you give it? *A.*—In the quantities contained in these drugs.

Q.—Some of them contain alcohol up to 50 per cent., don't they? *A.*—Yes.

Q.—When you give it for these conditions, the age of the woman has nothing to do with the situation, has it? *A.*—Well, yes. If a woman is reaching a period of life that is beyond—that is near the menopause, or beyond, I would want to be perfectly satisfied that there was no possibility of any malignant disease.

Q.—I am talking about the age of the woman? *A.*—Well, you spoke of the age, and I said, if she reaches the period of the menopause, I would not give the drugs unless I was absolutely certain that there was no possibility of a malignant disease, and in no case—

Q.—Do you know of any more common remedy that has been given by general practitioners in the past for amenorrhea in the virgin, than viburnum prunifolium? *A.*—Well, I do not know.

Q.—Has it not been referred to in the profession, as "the time honored remedy, viburnum prunifolium?" *A.*—For amenorrhea?

Q.—In the virgin? *A.*—No.

The witness then testified as to the use of iron, strychnin and quinin as a tonic and its use in amenorrhea, and that he would use no drug in a normal pregnancy. He described the menopause as a physiologic process, not a disease.

Q.—What are the principal medicines given by mouth for the distressing symptoms which women usually suffer during the menopause? *A.*—Well, for the nervous manifestations, we would give asafetida, and valerian, and sometimes the administration of the thyroid extract and corpus luteum.

Q.—Is that condition usually attending with flooding, or frequently attended with flooding? *A.*—No. The menopause, when flooding occurs, there is some abnormal condition that should be investigated.

Q.—What is the most frequent symptom, that is a distressing symptom to a woman, during the menopause, not connected with an abnormal condition? *A.*—The disturbance of her nervous system. Her internal secretions having been disturbed, the balance wheel is taken out. It is like an automobile running at a rapid rate. She has, suffers from flashes of the face—her face will become scarlet.

Q.—You mean hot flashes? *A.*—Yes, and then she will be perfectly cold and white and she has manifestations of sweating.

Q.—Of which? *A.*—Sweating and things of that kind, simply the indications of want of control of the vasomotor system.

Q.—Is that connected with the nervous system, the general nervous system? *A.*—Yes.

Q.—Are tonics ever given in those conditions? *A.*—They are given, but without very much benefit.

Q.—Without which? *A.*—Without very much benefit.

Q.—Do you mean that is your individual opinion, or the opinion of the— *A.*—That is my experience.

Q.—Well, practitioners generally give them, don't they? *A.*—Oh, yes. Practitioners oftentimes have to give medicines in self defense. If a patient comes to you suffering from a condition, if you treat the patient as a patient ought to be treated, and not give medicine, the patient is not satisfied, so that a physician not infrequently gives medicine simply to make the patient feel that something is being done.

Q.—You mean for the psychic effect? *A.*—Certainly.

Q.—Would the physician be practicing a fraud on the patient doing that? *A.*—No, because he is treating the patient physically and he wants to treat her in a way that will be of the least detriment to her general health.

A PLACEBO

Q.—Well, in those conditions, does he ever give anything but a placebo? *A.*—Yes.

Q.—Will you explain to the jury what a placebo is? *A.*—A placebo is a medicine like a bread pill, or something that is perfectly inert, like a starch capsule, or something like that. Now, there are times when patients are in a state of health, in a mental condition such that they must be given something to make them feel that they are given treatment. Take a patient who has been taking remedies for sleeplessness. If you said to that patient: "You don't need anything," she would feel that you were neglecting her. But if you give the patient something that is inert, that is doing her no harm, that will do her no good, so far as the remedy itself is concerned, you are treating the mental condition of the patient, and doing her good.

Q.—Isn't it always necessary to consider the mental attitude of the patient? *A.*—Always.

Q.—In other words, the psychic influence is always an important influence? *A.*—Yes, sir.

Q.—In the giving of all medicine? *A.*—Yes, sir.

Q.—And for that reason you must assert positively that the medicine will absolutely do good? *A.*—Yes. Faith in medicine is very essential.

The witness then described inversion of the uterus, its complications and treatment. He described emmenagogues.

Q.—What would you call an emmenagogue? *A.*—An emmenagogue is something that acts directly upon the uterus.

Q.—To make menstruation normal? *A.*—Well, not necessarily. An emmenagogue is something that is not infrequently used to make menstruation come when the patient is very desirous that it should come. In other words, to produce an abortion.

Q.—An emmenagogue is used for that? *A.*—Yes.

Q.—What emmenagogues have you ever heard of that were used to produce an abortion? *A.*—Why, apiol, and all the remedies that produce the effect of the emmenagogue.

Q.—You recommend apiol in your book, don't you? *A.*—Yes, but not in pregnancy.

Q.—Not in pregnancy? *A.*—No, sir.

Q.—I was not talking about pregnancy. I was talking about a case of inversion. *A.*—Well, I would not recommend apiol in inversion, no.

Q.—Because it is not a tonic? *A.*—No, because it has no effect one way or the other on an inversion.

Q.—Or on any of the conditions which accompany it? *A.*—No.

Q.—When do you give apiol? *A.*—Why, I give apiol in cases of amenorrhea, when I realize that it is not due to pregnancy.

Q.—Is that in liquid form? *A.*—No, I very rarely give it in liquid form.

Q.—It comes in liquid form, doesn't it? *A.*—I believe so.

Q.—It comes with alcohol? *A.*—It is more easily given in the small capsules.

Q.—It comes with alcohol, doesn't it? *A.*—I wouldn't like to say just at present. I don't remember.

Q.—You don't know whether it does or not? *A.*—No, I do not.

Q.—For what conditions do you give pulsatilla? *A.*—As a preliminary to the occurrence of menstruation in those cases in which the individuals suffered from dysmenorrhea.

Q.—That is 60 per cent. alcohol, isn't it? *A.*—Yes, and a very few drops of it are given; ten drops usually are given.

Q.—How much? *A.*—Ten drops at a dose.

Q.—But there is nothing to prevent the patient taking as she wants, is there? *A.*—Why, if she wants to depart and go to the other world she can take larger doses.

Q.—What is the lethal dose? *A.*—I don't remember the lethal dose.

Q.—Well, how much would she have to take to go to the other world? *A.*—Well, I wouldn't like to have a patient take a dram of pulsatilla.

Q.—You would not? *A.*—No.

Q.—But you don't know what the limit would be? *A.*—No, I do not at this moment know the limit.

Q.—How? *A.*—At this minute I do not know the limit.

Q.—Did you ever give medicine by the mouth in any cases of sterility? *A.*—Yes, sir.

Q.—What medicine? *A.*—Why, medicines that improve the general nutrition of the patient. Medicines that will decrease inflammatory conditions that exist in the uterus and its appendages, and especially thyroid extract, and corpus luteum.

Dr. Montgomery discussed sterility and mentioned the treatment. He also discussed gonorrhea and its treatment.

CANCER

Q.—Doctor, have you ever known of a true case of carcinoma that was ever cured by a surgical operation? *A.*—Yes, sir; many of them.

Q.—You mean then that there are cancer cures? *A.*—Certainly.

Q.—Why, haven't the research laboratories been hunting for that a long time? *A.*—By a surgical operation, you said.

Q.—Yes?

THE COURT:—Do you distinguish between curing and eradicating the disease?

The Witness:—Well, he asked me if the cancer—yes, I mean by cure of cancer the eradication of the disease.

THE COURT: *Q.*—By the operation? *A.*—Yes.

Mr. Hough: Q.—You say there are cases of true carcinoma that are cured by operation? *A.*—Yes, sir.

Q.—And the disease eradicated? *A.*—Yes, sir.

Q.—Isn't it a fact that they only live a few years after the operation? *A.*—Well, the disease occurs at a period of life in which possibly the individual reaches a time when she will ultimately die, but I have patients that have been twenty years living after the operation; that are still living and—

Q.—Well, but—I beg your pardon. And which? *A.*—And in which the patients are still in good health, some of them.

Q.—But don't you give those patients other treatment? *A.*—No, sir.

Q.—No other treatment whatever? *A.*—No, sir, no other treatment.

Q.—Isn't it coming to be a recognized fact that cancer is a blood disease? *A.*—No, sir.

Q.—And cannot be eradicated by operation? *A.*—No, sir.

Q.—Do you know anything about cancer research hospitals? *A.*—Yes, I do.

Q.—They are hunting for a cure for cancer? *A.*—Yes, they are hunting for a cure. They are hunting for the cause of cancer, and to meet the condition, to eradicate the disease, or to prevent the effects of the disease, by reaching it in the precancerous state.

Q.—Aren't you confusing cancer with sarcoma? *A.*—No, sir, not at all.

Q.—What is sarcoma? *A.*—Sarcoma is a malignant disease involving the connective tissues. Cancer involves the epithelial tissue, and both of them, in my judgment, due to the same cause.

Q.—And both equally curable or incurable? *A.*—Yes, sir.

Q.—Isn't it a fact that the therapeutists contend that cancer is a blood disease, and that the operation is merely palliative? *A.*—I don't know of any therapeutist—

Mr. T. J. Scofield:—Oh, wait a minute, doctor. I object to that.

THE COURT:—He may answer.

The Witness: A.—I know of no therapeutist that takes such a position. Cancer, sarcoma, any malignant disease, after a time may be carried beyond the point in which it originates, and then is a constitutional rather than a local disease. But in its origin it is a local disease, and if attacked, and the part in which it originates removed, the cancer is cured.

Q.—What is the origin of cancer? *A.*—Well, that is a question that I would be glad for somebody to tell me.

Q.—I thought you just stated that you knew? *A.*—No, I said the point in which it originates, the local situation in which it originates. Now, it may originate in different parts of the body.

Q.—Well, how can you say that it did not originate in the blood which deposited the germ at this weakened part of the body? *A.*—Well, I will not admit in the first place that there is a germ causing cancer. In the second place, the fact—

Q.—Well, would you say bacillus? *A.*—Well, I will not admit that there is a bacillus that causes cancer, that there is a micro-organism that causes cancer. I do say—

Q.—You mean, that there is no micro-organism that causes cancer? *A.*—That is what I say; I do not admit that.

Q.—That is what I wanted to know. *A.*—No, sir, I will not admit that. I will not admit that cancer—

Mr. Hough:—That is what I wanted to know. Go ahead and finish your answer. *A.*—That it begins in a point—and that is what I mean by originates—it begins usually in the neck of the womb and in that part which is most frequently subject to irritation. So far as we know now, cancer originates in cells which have been injured, previously injured, or in structures which have been previously injured and the cells therein become changed and undergo a tendency to proliferation or multiplication.

Q.—But you would be sure that the action of the blood had nothing to do with the sarcoma? *A.*—I do. The blood becomes impurified sub-

sequently by the products of the cancer, but the blood does not cause the cancer.

Q.—Has that been definitely determined? *A.*—The fact that we can remove the womb, the structures in which cancer starts, and the patient has no return of the disease and lives five, ten, fifteen years afterwards, without any return, and that if it is left until the disease passes into the nearest lymphatic glands or into structures around it and they become involved, and we operate then and the disease returns, that indicates that the disease is a local disease in its origin.

Q.—Is medicine ever given for cancer, by the mouth? *A.*—Yes, and never with any benefit.

Q.—How do you know that it is never with any benefit? *A.*—Because patients have taken it, and it has left the cancer undisturbed. Medicine has no effect upon it whatever.

Q.—Well, the practice is very general, isn't it, to give medicine by the mouth? *A.*—Not for cancer.

Q.—Well, to what extent is it given by the mouth for cancer? *A.*—No conscientious physician would waste ten minutes if he had a case and knew it was a case of cancer, by the administration of medicine.

Q.—Well, all the physicians who give medicine are conscientious, aren't they? *A.*—Not if they recognize it is a case of cancer, and give it.

Q.—Well, they believe when they give medicine that it is going to do good?

Mr. T. J. Scofield:—Wait, I object to that question.

THE COURT:—Objection sustained.

Mr. Hough:—I object to his using the words "conscientious physician."

Mr. T. J. Scofield:—I suppose you do.

THE COURT:—Well, you could have objected at the time, but you have got by that.

Mr. Hough:—Well, I was objecting in a different way, by approaching the question differently.

Q.—To what extent, do you know, is medicine given by the mouth for cancer?

THE COURT:—Oh, he said not at all.

Mr. T. J. Scofield:—I object to that question, if the Court please.

Mr. Hough:—Well, he said first that he knew it was given.

Q.—You said first you knew it was given. That physicians did give medicine by the mouth for cancer. *A.*—I said no conscientious physician who recognized it would do so.

Q.—I asked if you didn't know that physicians did give medicine by the mouth for cancer? Didn't you answer yes to that? *A.*—I didn't intend to, if I did.

Q.—Then you know of no physicians that give medicine by the mouth for cancer? *A.*—No.

Q.—You never heard of it? *A.*—Oh, I have heard of a great many things that I don't believe in.

Q.—That is not the question whether you believe in that treatment or not. The question is whether that is a treatment that is used by some physicians? *A.*—That is not a recognized treatment.

Q.—You mean surgeons do not recognize it? *A.*—No, or physicians, either.

Q.—Physicians that use it, recognize it, don't they?

Mr. T. J. Scofield:—He cannot tell what goes on in the minds of physicians that use it.

The further hearing of the cause was adjourned until Monday, April 17, 1916, at 10:30 o'clock a. m.

April 17, 1916, Morning

The court met pursuant to adjournment. In the absence of Mr. Hough, the defendants introduced another witness before proceeding with cross-examination of Dr. Montgomery.

TESTIMONY OF DR. C. K. MAXWELL

Dr. C. K. Maxwell was called as a witness for the defendants.

DIRECT EXAMINATION BY MR. LOESCH

Dr. Maxwell testified that he resides in Kellyton, Ala. He has been practicing since 1891, when he graduated from the Medical Department of the University of Alabama. He has been in Kellyton eighteen or twenty years. He was called to see a Mrs. W. at 1 o'clock at night, and found her in labor. She was threatened with an abortion. She had taken half a bottle of Wine of Cardui in half a day. The patient was much exhilarated and somewhat excited. The stomach contents showed that she had a little Wine of Cardui in the stomach. He gave her a hypodermic injection of morphin and later 10 grains of potassium bromid. He stopped the taking of Wine of Cardui and the patient went along without the abortion. She was about four months advanced in pregnancy.

He also attended a Miss B., school teacher, who was nervous and broken down from overwork. She had been taking Wine of Cardui for four or five months. She told the witness that she took it because it was recommended as a woman's tonic and it braced her up and made her feel more like doing her work. He recommended two or three weeks' rest, gave her saline cathartics to aid elimination and prescribed 1/30 grain of strychnin three times a day. The patient soon recovered.

He was called in 1914 to see two negroes who had had a fight. One had cut the other in the scalp with a knife. The witness testified that he sewed up the wound, employing eight or nine stitches. The negroes stated that they had been drinking Wine of Cardui. Three empty bottles were lying where the fight occurred. The witness gave the names of the negroes.

The routine objections to this introduction of this evidence were made by the plaintiffs and overruled.

CROSS-EXAMINATION BY MR. WALKER

On cross-examination, the witness testified that he had met Dr. Heizer and that he had received a letter from Dr. H. G. Perry, secretary of the state medical society. He met Dr. Heizer in Birmingham. The witness has been in Chicago nineteen days. He came alone. His expenses are being paid by the American Medical Association. The witness testified that he has never been interested in the drug business and has not prescribed Wine of Cardui. He supplied the names and addresses of the patients mentioned in the direct examination. He gave Mrs. W. a hypodermic injection of morphin which caused nausea, and he did not make a chemical analysis of the stomach contents. The negro S. H—— was shot through the head and killed in a drunken brawl. The negro S—— was employed by the Saxton Lumber Company which was burned up.

The witness is employed by the Alabama Power Company as a witness in damage suits.

REDIRECT EXAMINATION BY MR. LOESCH

On redirect examination, the witness recollected that he had seen two boys buy a bottle of Wine of Cardui and drink the contents behind a store.

RECROSS-EXAMINATION BY MR. WALKER

The witness gave the name of one of the boys, name of his employer, and the address. He was repeatedly cross-examined concerning the incident mentioned, his distance from the boys, the appearance of the bottle, the appearance of the store, the owner of the store, etc.

CROSS-EXAMINATION OF DR. EDWARD E. MONTGOMERY (*continued*)

Dr. E. E. Montgomery resumed the stand as a witness for the defendants.

FURTHER CROSS-EXAMINATION BY MR. HOUGH

Dr. Montgomery described what he understood as a precancerous condition.

Mr. Hough: *Q.*—Doctor, is alcohol ever referred to as a habit forming drug? *A.*—Yes.

Q.—But not in the sense of morphin, and codein and their derivatives, is it? *A.*—It is not—yes, it is in the same sense.

Q.—You think it is no worse to prescribe morphin and its derivatives, codein, to a young girl at puberty, than to prescribe a medicine containing alcohol? *A.*—Yes, I should think it was very reprehensible to prescribe for a young girl at puberty any habit forming drug without it was under such supervision that it could be withheld.

Q.—Has it not been determined that alcohol is not a habit forming drug in the sense in which you apply the term to those other drugs, such as morphin and cocain and their derivatives? *A.*—Not to my knowledge.

THE MENOPAUSE

Q.—Did you say that the menopause was not a critical time in a woman's life? *A.*—Not especially.

Q.—What did you mean then, when you said in your book, on page 53, 1912 edition: "The menopause, or the conclusion of menstrual activity, is regarded as a critical period in woman's existence." *A.*—Well, I look upon that as—just as I have a good many other things that you will find in the book.

Q.—You mean you did not mean them? *A.*—They are so generally so considered that—I do not individually regard the menopause as a critical period in the individual's life.

Q.—You mean that you wrote in the book the things that you did not believe, rather than the things that you do believe? *A.*—There is no book that is written, but what the man would like to revise it before it was out of the press.

Q.—You also stated that it was very reprehensible, a very reprehensible thing to give any medicine containing alcohol in a gonorrheal condition, because it always made that condition worse, didn't you?

A.—Yes, sir.

Q.—Now then, why did you recommend a prescription for a gonorrheal condition which contains 60 per cent. of alcohol? *A.*—Read the prescription please.

Q.—On page 327 of your book, where it says: "Gonorrhea and acute cystitis are often ameliorated by the administration of balsams as copaiba, cubebs or sandal wood oil, or when the urine is acid and scanty, the diuretics, such as alkaline and salts alone or in combination with oil of birch, buchu or triticum repens. The following prescription is often serviceable. Ammonium benzoate, three drams; tincture of hyoscyami, three drams; extract buchu, vel, tritici repens, three"— A.—Three what?

Q.—Drams, as I read it. Now you know how much alcohol was in those things, didn't you, or did you? A.—I would like to see that prescription. Let me read that and look at it, please.

Q.—(Handing book to witness). I am not a pharmacist, and I may not have read it correctly. Benzoate ammonium three drams, tincture of hyoscyami, one to two drams, extract of buchu two fluid ounces. Teaspoonful in an ounce of water, four times a day.

Q.—Now, you knew that a teaspoonful of that contained how many drops of absolute alcohol? A.—About 30.

Q.—And yet you said that it was absolutely—did you say criminal to give it in that kind of a case? A.—No, I did not say criminal. I said it was not advisable. In the dose that it is given there, and under the supervision that it would be given, the alcohol would not be very effective.

Q.—You mean then that alcohol, if given by a physician has one effect and if taken without a physician's prescription, it has a different effect? A.—No, I don't mean anything of the kind.

Q.—What has the supervision got to do with the effect of the alcohol when a certain number of drops are taken in the system? A.—If the—the advantage of having a physician look after the patient is, that when the patient is taking a medicine, if it has any bad effect, if for instance the patient is more susceptible to the effect of the remedy than another individual, that remedy can be discontinued. If the symptoms are not favorable, the remedy would be discontinued, if she had only taken three or four doses. Now this remedy as prescribed here, is given more in chronic conditions, chronic cases, and is given more particularly for the relief of bladder symptoms, and if the patient is not relieved in a very short time by the administration of this, and showed any signs of recurrence of the condition, the medicine would be discontinued.

Q.—Well, you certainly would not give 30 drops of alcohol at a dose, if you thought that it was dangerous at all, would you? A.—Oh, no; I do not think that 30 drops is dangerous.

Q.—But you think that a little more, the amount which is in Wine of Cardui, would be dangerous? A.—If continued, as suggested that Wine of Cardui should be given.

Q.—I am talking about for each dose? A.—Well, one dose of a medicine is not dangerous itself.

Q.—You stated, Doctor, that you had an opinion as to the therapeutic value of this hypothetical medicine, based upon the assumptions in the hypothetical question, but you did not state what your opinion was. What is your opinion as to the therapeutic value of that medicine based upon the assumptions in the hypothetical question. A.—That is in gonorrhea?

Mr. Hough: Q.—In any of the conditions concerning which you testified. A.—I should say that it was of no value.

Q.—No value whatever? A.—No.

Q.—Now, doctor, if you are assuming that the medicine is a uterine medicine, how can you say that in your opinion it has no value as a uterine medicine when you have never used it? A.—Well, my first—in the first place, I must confess that the assumption is rather against my will.

Q.—Well, but you mean then that you made the answers you did ignoring the things which you were asked to assume, as true? A.—Yes, I accepted that.

Mr. Hough:—Then I ask that all the answers, all the testimony of the witness be stricken out.

THE COURT:—In reference to this particular answer I assume?

Mr. Hough:—No, all the answers which he gave to Judge Scofield's questions. He said he ignored all the things which he was asked to assume.

THE COURT:—You told the witness that he stated that he had an opinion, but he had not given it. Now you confined this question to the answer the witness has given now. Now, if you want to carry it back to the other questions and answers given there, ask him whether during his testimony, he has disregarded all of those things.

To which ruling of the Court the plaintiffs, etc., excepted.

Mr. Hough:—I understand that the witness stated that he did disregard those things.

Q.—You did disregard those things that you were asked to assume?

THE COURT:—In all your testimony.

The Witness: A.—In reference to what you have just asked me?

Mr. Hough:—No, in answer to Judge Scofield's questions, you ignored the assumptions which you were asked to assume as facts, with reference to the therapeutic value of the medicine or of the ingredients of the medicine.

Mr. T. J. Scofield:—That is objected to. The doctor stated, so far as my questions were concerned, that he had answered them upon that assumption.

THE COURT:—The motion to strike out will be denied as to anything, except the answer to this last question, that he thought it had no value. That may be stricken out.

To which ruling of the Court in denying the motion to strike out said testimony made by counsel for plaintiffs, the plaintiffs, etc., excepted.

And to which ruling of the Court in striking out the answer of the witness hereinbefore specified, the defendants, etc., excepted.

Mr. Hough: Q.—You stated, Doctor, that in your opinion, the medicine was worthless. In expressing—

THE COURT:—That has been stricken from the record.

Mr. Hough:—Sir?

THE COURT:—That was stricken from the record on your motion.

Mr. Hough:—I did not ask that that be stricken from the record. I asked that his testimony in answer to Judge Scofield's questions be stricken from the record, because, in answer to my question, he said he disregarded those assumptions.

THE COURT (Addressing the reporter):—We will let the record stand as it was then, Mr. Dickenson. Now go ahead Mr. Hough.

Mr. Hough:—Now, you did disregard those assumptions, did you?

Mr. T. J. Scofield:—Wait a minute. That is objected to, if the Court please. In what?

Mr. Hough: Q.—In all of the answers which you gave concerning the value of this medicine in any pelvic trouble?

Mr. T. J. Scofield:—I think we ought to know what he means by that, if the Court please. Is he referring to his last interrogations, or throughout the whole testimony?

Mr. Hough:—I have asked the question.

THE COURT:—He may answer.

To which ruling of the Court the defendants, etc., excepted.

A.—I accepted the question as answered me—or as asked me, rather.

Mr. Hough: Q.—You did assume that it had the medicinal properties which you were asked to assume that it had? A.—I assumed that; yes, sir.

Q.—And, assuming that it had the medicinal properties which you were asked to assume it had, you still say it is worthless as medicine? A.—I do.

The witness then discussed displacements and stated that it is desirable to consider the general conditions in treating all diseased conditions. If the condition can be relieved without it, it is better that it should be accomplished without the administration of medicine.

There was read to him a statement from one of his books advising the use of general measures of treatment in such conditions which he said was simply a summary of general measures of treatment.

Q.—What did you mean, when you stated in your book: "It is difficult to suppose that remedies will have a distinctive, selective influence on the uterus only. Those which have been so regarded are, ergot, cotton root, corn fungus, hamamelis, hydrastis canadensis, cotarnine hydrochlorid, cannabis indica and viburnum prunifolium." A.—I mean just simply what it says, that it is difficult to believe that any drug has a selective action which those that have been so regarded—I don't regard it so.

Q.—Well, what do you mean by "have been so regarded"? A.—By men who have practiced, and do still practice.

Q.—You mean practicing medicine? A.—Yes, sir, certainly.

Q.—Well, you say they don't have an action on the uterus only. That means it has an action on the uterus and acts also in other ways. A.—Certainly it acts on the uterus, in so far as the uterus is a part of the body.

Q.—I suppose any medicine which acted on the nervous system might be helpful in those conditions, might it not? A.—Certainly.

Q.—Any medicine which acted on the blood, would also be helpful in those conditions? A.—That is, if the blood needed improvement.

Q.—It usually does, don't it? A.—Not always.

Q.—Didn't you say it usually did? A.—Yes, in many cases it does, but we have to consider the blood in two directions, plethora and anemia.

Q.—Now, if there are no symptoms attending the displacement of the uterus, would you still favor an operation? I mean if the woman is suffering no inconvenience at all? A.—I said that it is well in those cases to correct the position of the womb in a—especially in a retrodisplacement, because the change of position in the womb interferes to some degree with the return of blood through the veins. The veins being thin walled and the arteries being thicker walled, the blood is being continually pumped into the organ, and has difficulty in getting out. The result is that it produces a certain amount of stagnation, which renders that womb less resistant to disease, which renders consequently the individual more susceptible to inflammation and changes in her nutrition affecting this organ, and for that reason, it is better if the womb—better that the position of the womb should be corrected. Now that may be by hygienic measures as I explained; by a change in the manner of her dress, in living, regulation of her bowels, and by mechanical means, raising the womb up and keeping it in a proper position by means of a support.

Q.—Bitter tonics are indicated in those conditions also, are they not, for the anemia? A.—Not because of the—

Q.—I don't mean for the mere mechanical condition of the uterus, but for the anemia which usually accompanies it? A.—Well, the anemia does not necessarily usually accompany such a condition.

Q.—Well, when it does? Q.—Oh, well—

Q.—The bitter tonics would be indicated, would they not? A.—Yes, bitter tonics can be used.

Q.—No, they are indicated, are they not? A.—Not necessarily.

Q.—What did you mean when you said on page 136 of your book, "frequent existence of anemia demands administration of reconstructives, such as quinin, strychnin, arsenic, mercury, the bitter tonics and, after proper preparation, iron." A.—Well, that is summed up.

Q.—You meant that, didn't you? A.—That is summed up as a part of the consensus of opinion, as to the different measures. A man who writes a book does not simply put down exactly his own ideas. He endeavors—

Q.—Do you disagree with that statement yourself, personally? A.—Yes, I don't give bitter tonics and solutions. I give them very rarely or advise them very rarely.

Q.—But this, of course, is a recommendation to practitioners generally, isn't it? A.—Yes.

Q.—And you recommend something for them which you would not do yourself? A.—I give what is followed in general practice.

The witness was then asked concerning the presence of inflammations with various uterine displacements. He said it was practically always present and that a medicine that would relieve the inflammation would tend to relieve the associated conditions.

REDIRECT EXAMINATION BY MR. T. J. SCOFIELD

Q.—Doctor Montgomery, on last Friday Mr. Hough read to you something from this book in regard to the treatment of certain conditions, in which the words "viburnum prunifolium" were used, and in which it was stated that it was used for those purposes. Now, you also asked Mr. Hough to refer to a previous page of your book as to your opinion of viburnum prunifolium, which he did not do. I will now read to you from Practical Gynecology, Fourth Edition, by Montgomery, and ask you as to whether or not this expresses your individual opinion of the value of viburnum prunifolium, reading from page 137:

"Viburnum prunifolium has been greatly vaunted as a remedy for the relief of dysmenorrhea or the arrest of threatened abortion, but I have never been able to obtain any perceptible value from its use." Is that true? A.—That is true, sir.

Q.—Does that represent your own idea of viburnum prunifolium? A.—That represents my own opinion.

Q.—And whatever else was said, was not with reference to your individual opinion? A.—Yes, sir.

The witness was then asked concerning the dosage used when prescribing fluidextract of ergot; he stated that it is never given over a long period of time and is usually given in a small dosage.

The Court refused permission on objection of the plaintiffs to the asking of a hypothetical question concerning a recommendation of a hypothetical medicine: whether such recommendation was a fraud? The Court stated that this was for the jury and not the witness to determine.

RECROSS-EXAMINATION BY MR. HOUGH

In recross-examination, the attorneys for the plaintiffs attempted to get a definition of the words "greatly vaunted," read to the witness by Mr. Scofield. Objection was made and overruled.

The witness stated that he did not remember who "vaunted" the remedy but that they were certain medical writers.

TESTIMONY OF MR. RENSHAW REED

Mr. Renshaw Reed was called as a witness for the defendants.

DIRECT EXAMINATION BY MR. WALDO

Mr. R. Reed lives in Ellenwood, Tenn., about 122 miles north of Chattanooga. He is 35 years of age and a widower. Objection was made to his testimony with regard to his personal experience with McElree's Wine of Cardui overruled and exception taken.

A.—My wife became in a family way.

THE COURT:—When was this? A.—This was in 1914, and a few months—two or three months afterwards, she complained of having hurting in her side, had a headache, dizzy headache. I insisted on her to use a doctor, and went for a doctor for her but she had heard and had seen of this Wine of Cardui, as the advertisement—and the women talking to her and advising her to use it.

Mr. Walker:—That is objected to.

THE COURT:—Yes, that is not the way to get at it, gentlemen. Can't you make it more specific.

To which ruling of the Court the defendants, etc., excepted.

A.—She did not want to use a doctor whatever, and so she went on—

Mr. Waldo: Q.—What did she use? A.—She used Wine of Cardui.

THE COURT:—How long did she use it?

Mr. Waldo: Q.—How much of it did she use, and how long did she use it? A.—She used as much as three or four bottles to my knowing.

THE COURT: Q.—Covering what period of time? A.—Well, two or three months I guess, something like that, maybe four.

Mr. Waldo: Q.—Now tell the jury the result of her use of Wine of Cardui.

Mr. Walker:—That is objected to.

THE COURT:—Yes. State what you observed.

To which ruling of the Court the defendants, etc., excepted.

A.—Well, she used the medicine, Wine of Cardui, and she told me that it was not doing her any good.

Mr. Waldo: Q.—Tell what you saw, Mr. Reed. A.—She did not seem to be doing any good up till the time to be confined, a few days later—why she told me she had a headache, her head was hurting her, hurting her. She asked me to go upstairs and go and lay down on the bed with her. We went up. We laid down there for a few minutes and she was talking and all at once she stopped talking. I looked around at her and she had her face drawn up this way (indicating by allowing the head to fall backwards) and her eyes throwed up and her mouth drawn around to one side, and she was shaking like this (indicating with both arms raised above the head and simulating a tremor). And it scared me and I hollered for my mother to come up. She ran up and says, "She is dying," and so on and I went for the doctor. This happened about 11:30 in the morning, and I got the doctor there about 3 o'clock in the afternoon, Dr. Foster from Huntsville. We were four miles from town. Well, that is about all I know about it. He come and he attended to the case, and my wife died. I lost my wife and baby.

Q.—You say you lost your wife and baby? A.—Yes, sir.

Q.—How much Wine of Cardui did your wife take? A.—Three or four bottles to my knowing.

Q.—Do you know what she took it for? A.—Yes, sir; she took it—

Mr. Walker:—That is objected to.

THE COURT:—Objection sustained.

To which ruling of the Court the defendants, etc., excepted.

Mr. Waldo: Q.—Over what period of time did she take it?

THE COURT:—He has already covered that. Three or four months he says.

The Witness:—Three or four months, maybe a little longer than that.

CROSS-EXAMINATION BY MR. WALKER

The witness testified that he came to Chicago with Dr. Foster.

TESTIMONY OF DR. JAMES ARNOLD FOSTER

Dr. Foster was called as a witness for the defendants.

DIRECT EXAMINATION BY MR. WALDO

Dr. J. A. Foster lives in Huntsville, Tenn. He graduated April 1, 1901, and has been practicing since that date. He testified after objection was made which was overruled, that in 1901 a colored man, W——, entered his father's store and purchased a bottle of Wine of Cardui. The colored man pulled the label off and drank about half of the contents. He finished drinking the contents and left the store. About an hour later the witness had a call to a town southwest of Huntsville. About 2½ miles out beside the road he saw W—— and from the appearance of W——, the witness judged that he was drunk. The witness testified that a printer, named S——, had periodic drinking spells. When out of whisky, S—— would wind up by drinking Cardui.

Q.—Now, have you ever had any experience with Wine of Cardui where it was used by your patients, and where its use formed a part of the history of their case? A.—Well, a Mrs. Reed, Renshaw Reed's wife. They lived at Ellenwood, Tennessee. I think this was in the year 1914, perhaps March.

Q.—You mean that Mr. Reed, who has just left the stand? A.—Yes, sir; that is the gentleman.

Q.—Go ahead. A.—I was called to see his wife one afternoon and I arrived at his home immediately after 3 o'clock. His wife was having one convulsion after another. As soon as she would relax she would go into another convulsion. I could get the history of the case and they said that she had been taking Wine of Cardui, had taken it up to the time of the convulsions that afternoon.

I said, "Why haven't you consulted a doctor? Haven't you noticed untoward symptoms that would call attention to the fact that she needed a doctor?" He said, "I have and I have tried to get her to have a doctor, but she is young and easily embarrassed," was his expression. "She had been reading after this Wine of Cardui, and it was recommended to cure women of their troubles and some of her lady friends had told her that it would cure her and she has insisted on taking that and she has been taking that and took it right up to close to the time of these convulsions."

Q.—What was the trouble with Mrs. Reed? A.—It was puerperal eclampsia.

Q.—What is that? A.—It is convulsions that come on at childbirth, due to poisons in the system. I believe that our best information now is that the poisonous materials—the kidneys are not throwing it out properly, and it is stored up in the system and poisons the nerves, the nervous centers of the system. That is the best information we have.

Q.—Was that what was the matter with Mrs. Reed? A.—That was what was the trouble with this woman.

Q.—How old was this woman? A.—As I remember it, she was 19 years old.

Q.—What became of her? A.—She died.

Q.—Do you know of any other case—when did she die, doctor? A.—She died sometime along in March. She died immediately after

these convulsions returned on her, and she remained in a comatose condition until the child was born dead, and I delivered the child dead.

Q.—How long after you first saw her did she die? *A.*—I think she lasted something like 24 hours, that is my best recollection.

Q.—Doctor, do you know of any other case where Wine of Cardui has been used by your patients? *A.*—I had a lady as I remember her, 48 years old. She came to consult me and said that she had pains in her lower abdomen, and her head was aching, and had a draggy feeling, and that her monthly periods—her expression was—had been gone for three or four years, and had returned again, and had returned in very dark heavy clots. She said, "I have come to you to see if you could not give me some medicine to help me out. I have had three children, but I have never been examined by a doctor, a man doctor, and I don't want to be examined, I don't feel like that I wanted to undergo an examination, because it is embarrassing to me," and she said further, "I have tried Wine of Cardui." I think she had taken two bottles— "and it does not seem to be relieving me soon enough. I have seen the advertisements of it in the Lady's Birthday Almanac and some of my friends have told me that that would relieve me, and it not being effective soon enough, I have come to you about it."

I noticed that her face had that hectic look of cancer, and I thought of tumors and of all those things that come in along at that age, and I said to her, "I could not prescribe to you under those circumstances without an examination to find out what your trouble is. It would indicate perhaps some serious trouble that medicine would not reach." And she said, "Well, I prefer to not be examined. I will go back and try Cardui a little further and if I am not relieved I will come back again."

And so she left, and I should say five or six months after that she came back and said she had come back to be examined. I examined the woman and I found carcinoma of the uterus, and it had gone so far that we could pick pieces off of the os of the uterus.

Q.—By carcinoma, you mean cancer? *A.*—Cancer. I told her that it was cancer and was too far gone for an operation, and that I could not promise her any relief—it at that time was very advanced—but that I could give her some medicine to keep it from being so offensive to her and to her friends, but that was about the extent of all I could do.

I further said, "This is a serious matter with you, and I will take you up to Knoxville to a surgeon there" (they were good people). "If you want to go, I will take you to Knoxville, and I will see if they don't confirm my diagnosis."

So she went—we went to Knoxville and we went to one of the best surgeons in Knoxville. He examined her and promptly told her the same that I had told her.

Q.—How long had she been taking Cardui? *A.*—She said she had been taking it for the five or six months between the time she first come to me, and the second time. She told me she had taken a few bottles before she came to me the first time.

Q.—There was no physical examination the first time? *A.*—No, she did not consent to that.

Q.—And did not consent to it for some months? *A.*—No, sir. I would say five or six months.

Q.—During that time she had been taking Wine of Cardui? *A.*—That was her statement.

Q.—What became of that woman? *A.*—She died a few months later.

Q.—Was she operated on, Doctor? *A.*—She was not. The surgeon refused to operate on her.

Q.—Why? *A.*—Too late; nothing to be gained.

Q.—Doctor, referring back to Mrs. Reed, when you saw her, in what state of pregnancy was she? *A.*—She was being confined, I should say the ninth month.

CROSS-EXAMINATION BY MR. WALKER

On cross-examination the witness testified that he is a member of the American Medical Association. He met Dr. Heizer one or two years ago.

Q.—As a member of the American Medical Association, did you know or receive copies of the articles of April 11, 1914, and July 18, 1914? *A.*—You mean the Journals?

Q.—Containing the articles on Wine of Cardui. *A.*—You mean in the Journals.

Q.—Yes. *A.*—I may have received them, but I did not open them. I will say that for the last six months or eight months I have not opened one of their Journals.

Q.—This is a year ago? *A.*—I did not open them then. I have been so busy that I did not have a chance to see them.

Q.—Had you finished your answer? *A.*—I am sorry to say that for the last year and a half or two years that it has been only one Journal perhaps out of every four that I have opened. I have not had time to open them.

Q.—Did you receive any other literature in regard to this case? *A.*—Not to my memory.

Q.—From the Medical Association? *A.*—I had from our State Medical Society a notification of the proceedings of this. That was the first notice that I had of this suit and of this affair of Wine of Cardui, and the American Medical Association.

The witness received a communication from Dr. Olin West, secretary of the State Medical Society. The witness saw Dr. Heizer in Huntsville. At that time Dr. Heizer went with him to call on a colored family, Bennett M—— and Mandy M——, who were photographed while drinking Wine of Cardui.

The witness was asked concerning the names and addresses as well as business of S—— and S—— W——. The father of the witness who conducted the store is now dead. The business is now being conducted by the witness's mother. He is not sure whether Wine of Cardui is now in stock.

REDIRECT EXAMINATION BY MR. WALDO

On redirect examination, objection was made to the question concerning the presence of the representatives of the Chattanooga Medicine Company in Huntsville. The question was withdrawn.

The witness testified that Mandy M—— and her husband drank one third of a bottle each. The witness saw no perceptible effect.

The further hearing of the cause was then adjourned to 2 o'clock of the same day.

(To be continued)

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

GLOBULIN TEST OF THE SPINAL FLUID

To the Editor:—Kindly give the technic for the globulin test of cerebrospinal fluid.

S. E. ROSENTHAL, M.D., Spokane, Wash.

ANSWER.—There are several tests given for the detection of globulin in cerebrospinal fluid. Among these the tests of Noguchi and of Nonne are probably the more commonly used.

In Noguchi's butyric acid test, 1 part (0.1 or 0.2 c.c.) of spinal fluid is mixed with 5 parts (0.5 c.c.) of a 10 per cent. butyric acid solution in physiologic salt solution. This mixture is heated to boiling and immediately 1 part (0.1 c.c.) of normal (4 per cent.) sodium hydroxid solution is added and the mixture again boiled for a few seconds. The presence of an increased content of globulin in the fluid is indicated by the appearance of a granular or flocculent precipitate which gradually settles under a clear supernatant liquid. This precipitate appears within a few minutes in a specimen containing a considerable increase in globulin, while two hours may be required to obtain a distinct reaction in specimens weaker in globulin.

Nonne's test is applied in two phases, the first phase being of the greater diagnostic import.

Phase 1: To a small portion of the clear cerebrospinal fluid an equal volume of a hot saturated solution of ammonium sulphate is added. A trace of opalescence or a distinct turbidity, usually appearing within three minutes, indicates a positive reaction. Normal fluids never show any appreciable change with this test, while pathologic types always react promptly.

Phase 2: In case no turbidity is observed in Phase 1, a drop or two of acetic acid are added to the foregoing mixture. A distinct turbidity appears at once. This phase is given, not infrequently, with normal fluids, so that little value is attached to it.

PROVOCATIVE WASSERMANN

To the Editor:—My attention has been called to the term "provocative Wassermann" in some correspondence lately. What is meant?

MARCUS BEEKMAN, M.D., Natchez, Miss.

ANSWER.—By a "provocative Wassermann" is meant a positive Wassermann test produced as the result of an injection of salvarsan. It has been definitely established that if a patient is syphilitic, a negative Wassermann test may be converted into a positive one by the injection of salvarsan. This is due to the fact that spirochetes are killed and their toxic action is temporarily increased. The bodies involved in the Wassermann test are also thereby increased. This provocative Wassermann test may be obtained in every stage of infection. The blood should be taken before the injection as a control and the influence of the salvarsan determined by taking the blood twenty-four and forty-eight hours after the injection. In any case the blood must not be taken later than forty-eight hours after the injection.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Regular, Little Rock, May 9. Sec., Dr. T. J. Stout, Brinkley; Eclectic, Little Rock, May 9. Sec., Dr. C. E. Laws, 712 Garrison Ave., Fort Smith.

FLORIDA: Jacksonville, June 13-14. Sec., Dr. E. W. Warren, Palatka.

GEORGIA: Atlanta and Augusta, June 1. Sec., Dr. C. T. Nolan, Marietta.

IOWA: Iowa City, June 8-10. Sec., Dr. Guilford H. Sumner, State House, Des Moines.

KANSAS: Topeka, June 13. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, June 13-15. Sec., Dr. A. T. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 8-10. Sec., Dr. E. L. Leckert, 716 Macheca Bldg., New Orleans.

MASSACHUSETTS: Boston, May 9-11. Sec., Dr. Walter P. Bowers, Room 501, No. 1, Beacon St., Boston.

MICHIGAN: Detroit, June 1-3. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MISSOURI: St. Louis, June 13-15. Sec., Dr. J. A. B. Adcock, Jefferson City.

NEBRASKA: Lincoln, May 8-10 and June 8-9. Sec., Dr. H. B. Cummins, Seward.

NEW YORK: Albany, Buffalo, New York and Syracuse, May 16-19. Sec., Mr. Harlan H. Horner, Chief Examinations Division, Educational Bldg., Albany.

OHIO: Columbus, June 6-9. Sec., Dr. George H. Matson, State House, Columbus.

SOUTH CAROLINA: Columbia, June 13. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

WYOMING: Laramie, June 14-16. Sec., Dr. H. E. McCollum, Laramie.

Arizona January Report

Dr. John Wix Thomas, secretary of the State Board of Medical Examiners of Arizona, reports the written examination held at Phoenix, Jan. 4-5, 1916. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 9, of whom 3 passed, including 1 osteopath, and 6 failed, including 1 osteopath. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Tulane University of Louisiana	(1905)	77.4
Sai Sei Medical College*	(1892)	76.1
FAILED		
Columbian University	(1885)	40.9
Chattanooga Medical College	(1891)	58.1
Memphis Hosp. Medical College	(1892)	61.3
National School of Medicine, Mexico	(1910)	61
Nippon Medical College†	(1913)	66.7

* The name of this college does not appear in the official list of existing Japanese medical schools.

† Reported not recognized by the Japanese government.

North Dakota January Report

Dr. G. M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the oral, practical and written examination held at Grand Forks, Jan. 4-7, 1916. The total number of subjects examined in was 13; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 10, of whom 5 passed and 5 failed. Thirteen candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Total No. Examined
PASSED		
Northwestern University	(1914)	1
Rush Medical College	(1913)	1
University of Minnesota	(1915)	1
St. Louis Coll. of Phys. and Surgs.	(1887)	1
Marquette University	(1915)	1
FAILED		
Chicago College of Med. and Surg.	(1915)	1
University of Illinois	(1914)	1
Medical College of Indiana	(1902)	1
Eclectic Medical College, Cincinnati	(1894)	1
Milwaukee Medical College	(1912)	1

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of Georgia	(1913)	Georgia
Hahnemann Med. Coll. and Hosp., Chicago	(1909)	Illinois
Northwestern University	(1910)	Illinois
Rush Medical College	(1895) Indiana; (1910) (1911)	Illinois
University of Illinois	(1914)	Illinois
University of Indiana	(1910)	Indiana
Kentucky University	(1904)	Louisiana
University of Minnesota	(1904) (1908) (1912) (1914)	Minnesota

Book Notices

THE AMERICAN ENCYCLOPEDIA AND DICTIONARY OF OPHTHALMOLOGY. Edited by Casey A. Wood, M.D., C.M., D.C.L., Professor of Ophthalmology, College of Medicine, University of Illinois. Volume 8—H to Institutions for the Blind. Cloth. Price, $6. Pp. 5673-6418, with illustrations. Chicago: Cleveland Press, 1916.

Having reached the article "Institutions for the Blind," this work must be more than half complete; and it is not too much to say that the expectations roused by the appearance of Volume I have been more than satisfied. A noteworthy feature, thoroughness and accuracy considered, has been the extreme rapidity of its appearance; for whereas the second edition of the Graefe-Saemisch "Handbuch der gesamten Augenheilkunde"—the only publication with which this encyclopedia is at all comparable—has been for more than twenty years in process of appearance, and is not yet complete, the work in question, though much more comprehensive than the corresponding German monograph, will be an accomplished fact, judged by present indications, within five years from the day Volume I was issued. This is a time record, surely.

Perhaps the most important article in the present volume is that by G. F. Libby of Denver, entitled "Heredity in Ophthalmology." In the compass of sixty-four pages, Dr. Libby has treated a complicated subject in a way which should make the article a classic for many years to come. Dr. Libby's article alone, with its clear and simple style, its numerous illustrations, its excellent arrangement and its close adherence to the actual needs of the practicing ophthalmologist, is well worth the price of the volume.

Interesting, useful and exhaustive articles also appear on "Injuries of the Eye," by Würdemann, on "Herpes Zoster Ophthalmicus," by Chance, and "Hospitals, Ophthalmic," by T. A. W.—probably Thomas A. Woodruff. Not least among the features of the book are the sketches and historical articles by Thomas Hall Shastid. They exhibit not only a most excellent literary style, but, as a biographic fountainhead, will continue to be a source of supply from which future historians of ophthalmology may draw material as well as inspiration.

If there be any fault it is that now and then a term and its definition have been included which do not specially belong within the province of ophthalmology, as "hematinometer" and "hypsometer," although it may be argued that a knowledge of general laboratory methods and of applied optics forms part of the equipment of the educated ophthalmologist.

The patience and literary skill of the editor and his collaborators are evident throughout the book. The editor takes the responsibility for the numerous definitions, which are practically all excellent. The unity and the coordination of part with part, which appear in every volume, are creditable to him. They make this vast work a genuine encyclopedia of ophthalmology.

DIAGNOSTIC METHODS, CHEMICAL, BACTERIOLOGICAL AND MICROSCOPICAL. A Text-Book for Students and Practitioners. By Ralph W. Webster, M.D., Ph.D., Assistant Professor of Pharmacological Therapeutics, Rush Medical College. Fifth Edition. Cloth. Price, $4.50 net. Pp. 758, with 208 illustrations. Philadelphia: P. Blakiston's Son & Co., 1916.

The fourth edition of this work appeared in 1914. While the European war has curtailed progress in scientific lines, sufficient new material has developed to warrant changes in the book. Among the additional subjects which Dr. Webster has included are Petroff's method of obtaining cultures of tubercle bacilli; the *Endameba gingivalis;* the *Bacillus rhinitis;* Wolff-Junghans' test for gastric carcinoma; Wagner's "dry test" for occult blood; the phenoltetrachlorphthalein test of hepatic activity; the urease method for urea; Folin's new method for creatinin in urine; Benedict and Murlin's method for urea; Folin's new method for creatin in urine; Benedict and Murlin's method for amino acids in urine; Folin and Denis' microchemical methods for nonprotein nitrogen, urea and uric acid in the blood; the Schick diphtheria toxin reaction; Bronfenbrenner's modification of Abderhalden's test, and tests of blood before transfusion. The book shows throughout a careful revision of each section with the object of having the book well up to date.

Miscellany

Why Every Medical Man in Michigan Should Attend the A. M. A. Meeting

The reasons why every medical man in Michigan should attend the A. M. A. meeting are many, and should be convincing. In the first place no medical man can attend these meetings without learning something. He will learn something which will be of value to him in his practice. He will go back to his constituency better prepared to practice his profession. The section meetings of the American Medical Association are thoroughly scientific and up to date and instructive. It has been my good fortune to attend medical meetings in nearly every part of the civilized world. I know of no more progressive, scientific and valuable meetings than those of the different sections of the A. M. A. In each section one will hear the latest phases of the special subject discussed by men eminently qualified to do so. The only trouble that one has in attending these meetings is that there is an embarrassment of riches. There are so many good things going on at the same time that one is at a loss to know which way to turn. He sometimes finds himself much in the situation of the fabled ass who, finding that he was equidistant from abundant food on each side, starved to death before he could decide on which way to go. The papers and the discussions in the different sections are certainly worth hearing, and possibly participating in. One may get valuable material himself and at the same time carry information to others.

Next in importance to the meetings of the sections, I would place the scientific exhibit. Here one finds that the latest devices, the most important instruments of precision, every mechanical help in diagnosis, the latest chemical studies, all so arranged that he who runs may read. If the meetings of the A. M. A. did nothing else than bring together the wonderful and valuable scientific exhibits which have marked these meetings for the past few years, it would fill an important function and would justify every medical man in attending. There you will find the latest microscopes, microtomes, optical instruments, blood testing apparatus, in short everything which the doctor uses. One cannot afford to miss these demonstrations. Even when the exhibit does not directly concern one's special line of practice, he learns much which increases his value as a physician; he becomes a better man and a better practitioner.

Closely connected with the scientific exhibit one will find the display of new books, new journals, new monographs, everything new from the press which may be of benefit to the medical man. In this way one is able to keep himself in touch with the times, and the doctor who falls behind the times is soon irretrievably lost. No one finds this out quicker than his intelligent patients. The intelligent people of a community will appreciate the doctor's going to the meeting of the A. M. A. They will think he is likely to learn something there which will make him a more capable and efficient practitioner of medicine. The commercial exhibits are also of great interest. The medical man is never able to get entirely away from the manufacturers. He will see what the manufacturers of instruments and the manufacturers of medicines are doing. Besides these, there are displays of charts illustrating the work of preventive medicine, showing how this disease and that has been reduced, what measures have been taken, how to secure better water and better air. School hygiene is usually well illustrated and from these exhibits the doctor returns to his home with much which he may utilize in the prevention of disease. While credit for this comes slowly from the public, it is coming surely. No physician in Michigan can afford to miss the scientific sections, the scientific exhibits, the exhibits in preventive medicine work, even the commercial exhibits which will be at his service at the meeting in Detroit in June.

There are many other reasons why the doctor should go to the meeting. He will meet with many friends, he will make many new friends, and from many of these he will learn more or less of value. He will see and hear men whose books and articles he has been reading for years, and in their presence he will be able to form a more just estimate of their real value. No one can live to himself alone, especially is this true of the practitioner of medicine. He cannot stand still intellectually. He either retrogrades or progresses, and in order to progress he must come in touch with the best that there is in the profession, and this he will find at the meeting of the American Medical Association.

There are still other important reasons why every medical man in Michigan should attend the A. M. A. meeting. The intelligent people in your community expect you to do so. They demand that their doctor should be up to the times, that he should be among the best, and that he should not become fossilized. I have no doubt that there are other reasons why every medical man in Michigan should attend the American Medical Association meeting, but it seems to me that any one of the above given should be sufficient. Let Michigan turn out *in toto*. Let every one of the three thousand or more physicians in the state meet with his fellows in Detroit in June and be rejuvenated, refreshed and a better doctor when he returns to his home.—V. C. VAUGHAN, SR., Editorial, *Jour. Mich. State Med. Soc.*, May, 1916.

Medicolegal

Duty of Surgeons—Reopening Wound to Recover Sponge—Relying on Count of Nurse—Restrictions on Testimony After Death of Patient

(*Barnett's Administrator vs. Brand* (Ky.), *177 S. W. R. 461*)

The court of appeals reversed a judgment for a defendant charged with the death of a woman patient due to malpractice. The defendant had been employed to perform an operation for the removal of the ovaries. When the operation was performed, three other physicians and a competent trained nurse assisted. Toward the completion of the operation the patient collapsed, and it was found necessary to administer stimulants and resort to artificial respiration. On account of this condition, and to prevent the patient from dying on the table, the operation was concluded immediately. The affected parts were packed with drainage material, one end of which extended into the vagina. Before the incision was closed, the nurse stated that all the gauze pads had been removed. Later the defendant was informed by the nurse that one of the pads was missing. The incision was reopened and fresh drainage inserted. When the old drainage was removed, the missing gauze pad was found. There was evidence to the effect that the death of the patient resulted from the shock of the two operations, and also that the presence of the gauze pad was not the cause of her death, but that her condition was such that she would have died anyhow. The jury was instructed that it could not find the defendant negligent for leaving the sponge or pad in the body of the patient if it believed from the evidence that at the time it was the professional custom or usage among good surgeons generally, and in the community where that operation was performed, to secure the assistance of a trained and competent nurse and to intrust to her the duty of counting the sponges or pads, and to rely on the accuracy of her count. This was erroneous.

In performing an operation, it is the duty of a surgeon to exercise reasonable care and skill. The operation begins when the incision is made and ends when the opening has been closed in the proper way, after all the appliances necessary to a successful operation have been removed from the body. The removal of the sponges or pads is a part of the operation, and an operation cannot be said to be concluded until such removal takes place. The custom in question and the defendant's reliance on the nurse's count were proper circumstances to be considered by the jury, in connection with the other facts attending the operation, in determining whether or not the defendant exercised reason-

able care and skill in the performance of the operation. On being apprised that one of the pads was missing, it was the duty of the defendant to open the incision, explore for the pad, and promptly remove it, provided this could be done without endangering the life of the patient. If the condition of the patient was such that death would have ensued, notwithstanding the presence of the pad in the patient's abdomen, there should be no recovery of damages. If the condition of the patient was such that further delay in exploring for pads, or in closing the operation, would endanger the patient's safety, the defendant was not negligent in then leaving the pad or sponge in her abdomen.

It was not competent, under the provisions of the code, for the defendant to testify to statements made by the patient. Neither was it not competent for him to testify to what he saw or did in the performance of the operation. An operation performed by a physician is a transaction within the meaning of the code, which in certain cases bars the testimony of one party to a transaction, after the death of the other. The case was remanded for a new trial.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, DETROIT, JUNE 12-16.

Alpha Omega Alpha Society, Detroit, June 12.
American Academy of Medicine, Detroit, June 9-12.
American Association of Anesthetists, Detroit, June 12.
American Assn. of Genito-Urinary Surgs., Washington, D. C., May 9-10.
American Association of Path. and Bact., Washington, D. C., May 9-11.
American Climatological and Clin. Assn., Washington, D. C., May 9-11.
American Dermatological Association, Washington, D. C., May 8-10.
American Gastro-Enterological Association, Washington, D. C., May 8-9.
American Gynecological Society, Washington, D. C., May 9-11.
American Laryngological Association, Washington, D. C., May 9-11.
Amer. Laryn., Rhin. and Otol., White Sulphur Sprgs., W. Va., May 5-6.
American Neurological Association, Washington, D. C., May 8-10.
American Ophthalmological Society, Washington, D. C., May 9-11.
American Orthopedic Association, Washington, D. C., May 8-11.
American Otological Society, Washington, D. C., May 9-10.
American Pediatric Society, Washington, D. C., May 8-10.
American Proctologic Society, Detroit, June 12.
American Psychopathological Association, Washington, D. C., May 11.
American Society of Tropical Medicine, Washington, D. C., May 9-11.
American Surgical Association, Washington, D. C., May 9-11.
American Therapeutic Society, Detroit, June 9-10.
Association of American Physicians, Washington, D. C., May 9-11.
Conference of State and Prov. Boards of N. A., Washington, May 16-17.
Cong. Am. Phys. and Surgs. of No. Am., Washington, D. C., May 9-10.
Connecticut State Medical Society, Bridgeport, May 17-18.
Florida Medical Association, Arcadia, May 10-12.
Illinois State Medical Society, Champaign, May 16-18.
Iowa State Medical Society, Davenport, May 10-12.
Maine Medical Association, Portland, June 7-8.
Massachusetts Medical Society, Boston, June 6-7.
Mississippi State Medical Association, Greenville, May 9-11.
Missouri State Medical Association, Excelsior Springs, May 8-10.
National Assn. for Study and Prev. of Tuberc., Wash., D. C., May 11-12.
National Association for Study of Epilepsy, Detroit, June 16.
Nebraska State Medical Association, Omaha, May 23-25.
New Hampshire Medical Society, Concord, May 16.
New Jersey Medical Society, Spring Lake, June 20-22.
New York State Medical Society, Saratoga Springs, May 16.
North Dakota State Medical Association, Devils Lake, May 10-11.
Ohio State Medical Association, Cleveland, May 17-19.
Oklahoma State Medical Association, Oklahoma City, May 9-11.
Rhode Island Medical Society, Providence, June 1.
South Dakota State Medical Association, Aberdeen, May 23-25.
Texas State Medical Association, Galveston, May 9-11.
Western Roentgen Society, St. Louis, June 9-10.
West Virginia State Medical Association, Wheeling, May 16-18.

MEDICAL ASSOCIATION OF GEORGIA

Sixty-Seventh Annual Meeting, held at Columbus, April 19-21, 1916

The President, Dr. W. S. GOLDSMITH, Atlanta, in the Chair

Cancer of the Breast

DR. L. C. FISCHER, Atlanta: The Rodman operation, which I advocate, is accompanied by less shock and certainly less loss of blood. Many patients between the ages of 30 and 40 on whom I operated have not returned in from one to five years. The most rapid and violent recurrences occurring in my work, causing the death of the patient early, after recurrence, were in two schoolgirls, both mulattoes, aged 18 and 19, respectively. The pathologist reported adenocarcinoma. Both patients were dead within a year after I operated, with recurrence and multiple metastases.

DISCUSSION

DR. H. S. MUNROE, Columbus: Many cases embodied in statistics, diagnosed microscopically, and put down as curable, are not genuine carcinoma. The microscopist, like the clinician, makes mistakes.

DR. F. W. MCRAE, Atlanta: Permanent results are due largely to the manner in which we handle our cases before and at the time of operation. It has been shown that in a large majority of cases not all cancer cells are removed at the time of operation.

DR. A. H. BUNCE, Atlanta: If we accept the theory that cancer develops from preexisting normal tissue and becomes cancer, there must be a stage when it is developing before it reaches the cancer stage. That is what MacCarty terms the precancerous stage of the growth. Therefore, the question of what the microscope shows is justifiable.

DR. WILLIS F. WESTMORELAND, Atlanta: The encephaloid variety takes about one year from the time it starts until the death of the patient, while the scirrhus takes about eighteen months. A point that is overlooked frequently by excellent physicians in cases of scirrhus of the breast is that the involved breast may be smaller than the other.

DR. J. M. CAMPBELL, Atlanta: An operation for tumor of the breast, whether malignant or not, should never be postponed on account of pregnancy, because the growth at that time is more rapid. The circulation in the breast is much more extensive during the latter part of pregnancy, and consequently there is greater increase in the growth of cancer during this period.

DR. HUGH BATTEY, Atlanta: I have seen a divergence of opinion between the clinical manifestations and the pathologic report—so great that we cannot demand of a woman who has a tumor of the breast to have the whole breast removed. As soon as the pathologist gives us accurate reports we shall get at the bottom of the cancer question.

Grave Danger of the Painless Blind Abscess: the Emetin Flash

DR. ROBIN ADAIR, Atlanta: A blind abscess may be situated over the apex of an infected tooth. Into this sac projects the necrotic end of the tooth. Surrounding the area is the alveolar process which, from contact with the infection, has also become necrotic. This furnishes the ideal conditions for the growth of bacteria, and from here they are carried to other parts of the body by the blood. This condition must be treated surgically either by extraction and curettement or by root resection. Simple extraction of these teeth will not always eradicate the foci. The necrotic area above the abscess must receive a curettement. If several affected teeth are to be treated, one should be sure that only one at a sitting be operated on, as a reaction similar to the administration of a vaccine will occur. In regard to the treatment of pyorrhea, all well informed dentists now agree that emetin has no place in the treatment of the disease. The hemostatic action of the drug only covers up and lowers the resistance of the patient to the streptococcic invasion underneath. The United States government sent out a report of this investigation showing that the ameba could be destroyed by local and hypodermic injections, but that the disease is not eradicated but only covered up, and that no permanent, beneficial result can be expected from its use in pyorrhea.

DISCUSSION

DR. E. C. THRASH, Atlanta: Every organism that is pathogenic and invades the mouth helps to keep up the irritation which produces Rigg's disease. It would be just as absurd to talk about curing that condition with any kind of local application as to talk about curing appendicitis by applying iodin. It is a condition that requires surgery, and emetin is only an adjunct to the treatment.

DR. CHARLES L. WILLIAMS, Columbus: The Research Commission of the National Dental Association, which is under the charge of Dr. Hartzell of Minneapolis, has found that

the lesions produced in these animals by inoculation with various streptococci found in apical abscesses and pyorrhea pockets are similar to those found in human beings.

DR. GEORGE M. NILES, Atlanta: The question is often asked, Why is it that some people can have bad teeth and go on apparently in perfect health and not seem in any way to be affected by the constant stream of bacteria flowing down their throats like coal down a chute? The reason is that when there is a sufficiency of free hydrochloric acid in the stomach those germs are destroyed, and the individual is immune from any harmful results.

DR. A. L. FOWLER, Atlanta: Too much stress cannot be laid on foci of pus in the mouth, in the gums, in the teeth and in the tonsils. I have had some cases in which the kidneys were involved that would not clear up until the focus of infection in the mouth was removed.

DR. J. M. THOMAS, Griffin: I have had seven cases of neurasthenia that were attributed directly to Riggs' disease, and the condition was relieved only by extracting carious teeth and removing the sources of infection. One of these patients died.

Acute Torsion on the Ovary in Young Girls

DR. H. S. MUNROE, Columbus: I have had two cases of torsion of the ovary. There was no history of previous ovarian trouble. I believe that in each case a normal ovary and tube became twisted at their attachment to the uterus. In each case the uterus was very small and infantile in type, scarcely large enough to locate by touch. It is probable that this condition had something to do with the etiology of the trouble. Operation in both cases terminated favorably.

DISCUSSION

DR. W. W. BATTEY, Augusta: Torsion of the ovary is quite common in the early months of pregnancy. I recently operated in two cases of torsion of the tube and ovary in the fourth month of pregnancy. A mass was found on the right side of the uterus. I was suspicious that there was an enlarged tube and ovary. Operation revealed torsion of the tube and ovary with beginning gangrene of both. The tube and ovary were removed in both cases without any interference with pregnancy.

Gastro-Enterostomies Performed During the Two Extremes of Life

DR. E. C. DAVIS, Atlanta: The first patient was a man aged 72, who had suffered from a duodenal ulcer and its effects for thirty years. The second patient was a child of 6, who had suffered from some duodenal condition causing so-called pylorospasm since she was 1 year of age. Both of these cases were diagnosticated by Dr. G. M. Niles, who recognized the fact that both were mechanical obstructions and not responsive to medical treatment, and urged the necessity for operative relief. The little girl was operated on, and finding the duodenum partly obstructed by a group of glands as large as a small hickorynut, with a Wassermann, one plus, a gastro-enterostomy was done. She is able to eat heartily, and has no nausea, and but little pylorospasm. Apparently she is a vigorous little girl. The man was found to have partial obstruction at the pylorus. His stomach was markedly dilated and filled with fetid residuum. He was debilitated and weak, and able to be up only part of the day. The urine and Wassermann were negative. A rapid gastro-enterostomy was done, and after nearly a week of stormy convalescence he began to improve. Two years have now elapsed, and he is in better health than for years, eating anything he wants, riding horseback and taking other exercises.

DISCUSSION

DR. GEORGE M. NILES, Atlanta: These two cases show the importance of the internist, the gastro-enterologist and the surgeon working together in obscure cases. It is a case of "United we stand, divided we fall."

DR. C. C. HARROLD, Macon: I should like to ask Dr. Davis whether he has done any suspension work in these cases of marked ptosis of the stomach, and if so, whether he has derived any benefit from shortening the gastrohepatic omentum after the manner of Coffey? I have had two such cases, in one of which great improvement followed operation, but the other did not seem to improve at all.

DR. T. J. ROGERS, Savannah: I have had twelve cases in which the operation described was performed, and in every case, except one, the patients were completely relieved. This one patient was operated on so recently that one cannot state definitely what the result will be.

DR. E. C. DAVIS, Atlanta: Concerning ptosis and splanchnoptosis, many of the viscera are out of place, as well as the stomach, so that operative interference has not been very satisfactory in cases of that kind. A few of them are relieved, but I have reference particularly to those cases in which gastro-enterostomy immediately relieved the condition for which I operated rather than corrected the tendency to ptosis.

Volkmann's Contracture

DR. C. C. HARROLD, Macon: These cases can in the vast majority of instances be prevented by not having bandages too tight, and by removing or loosening dressings, as soon as the patient complains of pain. It is always dangerous to put on a circular plaster-of-Paris cast in any fracture until after the original swelling has subsided, and better not at all. After these cases have resulted, they are not hopeless. If properly and patiently treated, the patients can be improved greatly and a large percentage of them cured, instead of being left miserable cripples. The sooner treatment is instituted the better.

Removal of Foreign Bodies from the Globe by the Electromagnet

DR. F. P. CALHOUN, Atlanta: In the management of magnetizable bodies of the globe two important facts should be borne in mind: 1. Immediate treatment. That is, the body should be removed as soon as possible, for in this way many eyes can be saved from sepsis, and the body is more easily removed than after it has become embedded in blood clots or new-formed tissue. 2. The localization of the body. If it is possible, the surgeon's eye can best and easiest localize the body if it is in the anterior segment, or with the ophthalmoscope if in the posterior segment, unless the lens has been penetrated or the vitreous chamber is filled with blood. If this method fails or is unsatisfactory, then an accurate localization of the body on paper should be made by an expert radiologist. In any event a roentgenogram showing a foreign body is positive evidence of its presence, yet a negative picture does not positively mean an absence, as the fragment may be too small to show on the plate.

Diseased Conditions of Salivary Glands and Ducts

DR. DUNBAR ROY, Atlanta: Chronic conditions of the submaxillary salivary glands usually manifest themselves by the obstruction of their ducts. The latter may be due to the presence of salivary calculi or from chronic thickening of the mucous membrane lining the duct. If this obstruction continues for any length of time, there is formed a submaxillary cyst which is called a ranula. The latter varies in size from a small swelling to such large proportions that it can be seen bulging below the chin. These ranulas may be confined to one side, but usually involve the whole floor of the mouth beneath the tongue. The ranula does not produce pain but only the discomfort of its presence. The larger it is, the more discomfort it produces. The treatment of this condition varies according to its size and cause. A salivary calculus in the duct can be removed, and in this way free drainage is instituted. Strictured ducts are dilated with probes. When the ranula has existed for some time, and is large, nothing short of destruction of the sac or production of a permanent fistula will suffice for a cure.

The method of Dr. G. V. L. Brown is in many cases quite satisfactory in its final results. It consists in making a permanent fistula by running a silver wire through the sac, clamping it with a lead shot and leaving it in for months. The procedure can be done under cocain, is not painful, and the wire produces practically no discomfort. My own method is as follows: Under cocain I open the ranula sac thoroughly and empty it. I wipe out the cavity with normal saline, and then scour thoroughly the whole inside of the sac with trichloracetic acid. The results are excellent.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Roentgenology, New York

March III, No. 3, pp. 123-190

1 *Fluoroscopic Bronchoscopy. G. W. Grier, Pittsburgh.
2 *Roentgenographic Diagnosis of Metastatic Pulmonary Malignancy; Report of Cases. A. B. Moore and R. D. Carman, Rochester, Minn.
3 *Roentgen Diagnosis of Pulmonary Tuberculosis. K. Dunham, Cincinnati.
4 *Roentgen Symptomatology of Pulmonary Tuberculosis. F. S. Bissell, Minneapolis.
5 Diaphragming Roentgen Rays. H. E. Potter, Chicago.

1. Abstracted in THE JOURNAL, Oct. 30, 1915, p. 1581.

2, 3 and 4. Abstracted in THE JOURNAL, Oct. 30, 1915, p. 1580.

Archives of Diagnosis, New York

January, IX, No. 1, pp. 1-90

6 Comparison of "Drop" Percussion with Methods Now in Use and Orthodiagraphy. O. Lerch, New Orleans.
7 Two Varieties of Palpatory Percussion. E. E. Cornwall, Brooklyn.
8 Significance of Tongue in Diagnosis of Diseases of the Stomach. D. Vander Hoof, Richmond, Va.
9 Roentgenology of Digestive Tract. S. Basch, New York.
10 Diagnosis of Abnormalities of Myocardial Function. T. S. Hart, New York.
11 Diagnostic Elements of Pontocerebellar Tumors. A. Gordon, Philadelphia.
12 Glioma of Eye with Rapid Recurrence After Enucleation. A. Nettle, New York.

Boston Medical and Surgical Journal

April 20, CLXXIV, No. 16, pp. 555-590

13 *Preventable Forms of Mental Disease and How to Prevent Them. E. S. Abbot, Waverley.
14 Pellagra; Review with Report of Case. C. A. Howland, Fall River.
15 Acid Autointoxication in Infancy and Childhood; Report of Cases. J. L. Morse, Boston.
16 Frequency of Epilepsy in Offspring of Epileptics. D. A. Thom, Palmer.
17 False Aneurysm of Brachial Artery. D. P. Penhallow, Boston.

13. **Preventable Forms of Mental Disease.**—Among the diseases mentioned by Abbot are feeblemindedness; dementia praecox; manic-depressive psychoses; psychoses due to destructive diseases of the brain; toxic psychoses and a more or less heterogeneous group. For each group he discusses the causes or theories as to cause and then points out how preventive measures may be applied effectively. Feeblemindedness in the parents, he says, is the chief cause of feeblemindedness in the child. To prevent it in children, matings of defective persons must be prevented. The best and most effective prevention is segregation in schools and colonies for the feebleminded, especially of the moron girls and women during the period when they are capable of bearing children. He is of the opinion that an indefinite number of persons may be prevented from developing dementia praecox, if they can be taught in childhood and youth to adopt more healthy attitudes toward life. Parents and teachers should begin at the first appearance of "queer" traits, perhaps even, as early as infancy, and continue till adult life, to make unremitting, tactful and sympathetic efforts to get into the little mind, to understand its point of view, to suggest happier and healthier ones, to lead the child to more objective and so more healthful contacts and interests, to teach more practical substitutions and aims, better ways of reacting and better attitudes towards persons and life.

The manic-depressive psychoses suggest to Abbot fatigue psychoses, and he treats them on that basis. If the conditions which cause the fatigue persist, the symptoms grow worse and develop into the depressions, the excitements, or the stuporous and sometimes delirious and delusional states of the manic-depressive psychoses. Perhaps, Abbot says, a half, possibly more, of the manic-depressive psychoses might be prevented if every one, especially those who tire easily, and those who have already had one breakdown, would take pains to learn what things cause fatigue; if they would recognize early what symptoms mean fatigue; if they would realize that persistence in the fatiguing conditions and conduct may mean a breakdown; if they would recognize that the cure of fatigue is rest and food, not more or different activity; and if the tired person would not think himself an exception to the general rule, but would apply to his own case the principles that he can see would apply to any one else. Besides this, if each person would realize that his endurance is limited, would find its limits, and would keep within them, far fewer manic-depressive patients would be admitted to hospitals, and there would be far less "nervous prostration."

Organic brain disease and the toxic psychoses, especially the alcoholic, are also discussed. By far the most important part of the toxic group, Abbot states, is alcoholic insanity—a wholly preventable psychosis, for no one would have it if he did not drink. Fully twelve and one-half per cent., one-eighth of all admissions to the hospitals for the insane, are due directly to this cause; and in an indefinite number of other psychoses the use of alcohol is an important contributing factor. Abbot emphasizes that movements which seek to educate the public as to the exact facts, without prejudice, exaggeration or sentiment, are the best. For an intelligent and educated public sentiment will back up restrictive measures which aim at wholesale protection against the evils of alcoholism, by rigidly restricting the sale of that which causes them. Abbot believes that if every one knew what the effects of alcohol really are, its internal use would be almost limited to the prescription of physicians.

Bulletin of Medical and Chirurgical Faculty of Maryland

April, VIII, No. 10, pp. 173-191

18 Inguinal Hernia from Medicolegal Aspect. R. W. Locher, Grafton, W. Va.

Cleveland Medical Journal

March, XV, No. 3, pp. 157-214

19 Necessity for Better Study by Medical Profession of Diseases in Their Relation to Occupation. J. W. Schereschewsky, Washington.
20 Eye Function and Light. P. W. Cobb, Cleveland.
21 Result of Closing Segregated Vice District on Public Health of Cleveland. A. R. Warner, Cleveland.
22 Case of Nicotin Poisoning. H. Feil, Cleveland.

Illinois Medical Journal, Chicago

March, XXIX, No. 3, pp. 161-240

23 Surgical Problems Considered from Standpoint of Morbidity. E. H. Ochsner, Chicago.
24 Health Legislation in Last Session of Illinois Legislature. W. F. Burres, Urbana.
25 Some Forms of Renal Infection. F. Kreissl, Chicago.
26 Conservation of Life in Prostatic. J. S. Nagel, Chicago.
27 Observations on Epilepsy. E. F. Leonard, Chicago.
28 Dementia Praecox Studies. B. Holmes and J. Ketinger, Chicago.
29 Alcohol in Its Relation to Insanity in Male Sex. C. C. Ellis, Chicago.
30 Bacteriology of Present So-Called Grip Epidemic. A. Gehrmann, Chicago.
31 Hydrotherapy in Cardiovascular Disorders. J. H. Kellogg, Battle Creek, Mich.
32 How Much Better Can We Treat Venereal Diseases Than We Did Twenty Years Ago? A. E. Mowry, Chicago.
33 Surgery and Syphilis. J. H. Carstens, Detroit.
34 Micro-Organic Weight. A. J. Hinkelmann, Galesburg.
35 Proteid Nutrition: Old and Modern Schools. M. Sahud, Chicago.
36 Indications for Cholecystectomy and Cholecystostomy. C. U. Collins, Peoria.

Medical Record, New York

April 8, LXXXIX, No. 15, pp. 631-676

37 Affective Physiology. G. V. N. Dearborn, Cambridge, Mass.
38 Phenomena Resultant on Fatigue and Shock of Central Nervous System Observed at Front in France. E. M. Auer, Philadelphia.
39 Acetonuria in Relation to Contagious Diseases. S. H. Blodgett, Boston.
40 Acute Surgical Abdomen. T. F. Lancer, New York.
41 Case of Sarcoma of Ovary Complicating Puerperium. G. L. Brodhead, New York.

April 22, No. 17, pp. 719-764

42 *Simple Method of Shortening Round Ligaments of Uterus for Cure of Retroversion. J. H. Kellogg, Battle Creek, Mich.

43 Esophageal Obstruction with Special Reference to Cicatricial Stenosis Diverticulum, and Foreign Bodies. E. W. Peterson, New York.
44 Autoserum in Treatment of Cancer; Report of Case. O. Paget, Freemantle, Australia.
45 Value of Modern Aids in Surgical Diagnosis. J. T. Howell, Newburgh.
46 Erysipelas Migrans and Multiple Abscesses in Six Months' Old Infant Successfully Treated With Vaccines. L. Fischer, New York.
47 Cerebral Syphilis of Recent Origin; Remarks on Therapy; Report of Cases. M. J. Karpas, New York.
48 Plan for Care of Insured Under Proposed Health Insurance Law. A. C. Burnham, New York.
49 Uniform Method for Collection of Spinal Fluid into Test Tubes. A. Levinson, Chicago.

42. **Shortening Round Ligaments of Uterus for Cure of Retroversion.**—Kellogg describes the operation which he has done for more than twenty-seven years. The method has been employed by him in more than 1,600 cases. The essential features were described several years ago, but important modifications have been made in recent years. The method consists in a blunt hook dissection of the round ligament bringing it through the roof of the inguinal canal without opening the abdomen suturing the base of the loop to the aponeurosis of the internal oblique, then draining the free end of the loop under this aponeurosis and out again so that recurrence of the prolapse is impossible. The ligament is not injured and no mutilation of any sort occurs. The small and superficial incision and the short time occupied by the operation give no occasion for shock. The operation does not give rise to complications in pregnancy as do some other methods. Scores of patients on whom Kellogg has operated have afterward become pregnant and in not a single instance has he known the operation to be responsible for miscarriage or any other complication. Patients sometimes complain of a slight drawing on either side during the early stages of pregnancy, but this symptom soon disappears. The results, when the cases are properly selected, are said to be better than those obtained from other methods. The proportion of failures within the last fifteen years has been less than 1 per cent.

New Jersey Medical Society Journal, Orange

April, XIII, No. 4, pp. 157-208

50 How Can We Detect Slight Enlargement of Heart? G. C. Shattuck, Boston.
51 Treatment of Fractures with Comparison of Open Methods. G. H. Sexsmith, Bayonne.
52 Abuse of Pituitary Extract. N. G. Price, Newark.
53 Midwife Problem—Past, Present and Future. S. Husserl, Newark.
54 External Signs of Syphilis of Eye. B. M. Howley, New Brunswick.
55 Exophthalmic Goiter. J. C. McCoy, Paterson.

New York Medical Journal

April 22, CIII, No. 17, pp. 769-816

56 Orthodontia and General Physical Health. B. W. Weinberger, New York.
57 Obstruction of Pylorus in Infants; Report of Cases. E. M. Sill, New York.
58 Intravenous Serobacterin Therapeutics. W. E. Robertson, Philadelphia.
59 Case of Diphtheritic Paralysis Complicated by Pneumococcic Meningitis; Recovery. H. B. Mills and J. A. Mendelson, Philadelphia.
60 *Immobility of Diaphragm Following Pleural Exudates. J. H. Pryor, Buffalo.
61 Case of Ischiorectal Abscess from Fish Bone. J. F. Saphir, New York.
62 Carcinoma Metastasis. G. McConnell, Waterloo, Iowa.
63 Causes of Right-Sided Abdominal Pain. S. Floersheim, New York.
64 Gonorrheal Infection of Urethral Glands. A. Lefort, Roistel, France.
65 Quinin and Urea Injections in Hyperthyroidism. L. F. Watson, Oklahoma City.
66 Medical Questions in Pennsylvania Compensation Act. (To be continued.) H. A. Mackey, Philadelphia.

60. **Immobility of Diaphragm Following Pleural Exudates.**—Eighty-three patients have been examined by Pryor. Of these, sixty-five were over 15 years of age at the time of attack and on the date of examination. Eighteen were children whose age varied from 2½ to 11 years. Of the whole number, forty-seven gave a history of having suffered from empyema, sixteen from pleurisy with effusion, and twenty from pleurisy with effusion associated with pulmonary tuberculosis. The results of careful observation in the entire group were as follows: In fifteen instances the comparative movement of the diaphragm on the affected side was normal, in seventeen the excursion was more or less restricted, and in fifty-three one half of the diaphragm was completely immobile. About one out of five recovered with function unimpaired, approximately the same proportion revealed disordered or limited action, and in one of each 1.6 instance, or about 63 per cent., all motion was lost.

Pennsylvania Medical Journal, Athens

March, XIX, No. 6, pp. 399-482

67 Pennsylvania Workmen's Compensation Legislation: How It Affects Physician, Surgeon and Hospital. W. A. Schnader, Philadelphia.
68 *Case of Cholesteatoma of Spinal Cord. W. E. Robertson and S. D. Ingham, Philadelphia.
69 *Surgical Treatment of Ascites by Direct Drainage; Report of Five Cases. R. T. Miller, Pittsburgh.
70 *Surgical Treatment for Absent Vagina. E. E. Montgomery, Philadelphia.
71 *High Frequency Destruction Treatment of Tumors of Bladder. A. A. Uhle and W. H. Mackinney, Philadelphia.
72 *Bacteriology and Treatment of Puerperal Infection and Septic Abortion. J. M. Fisher, Philadelphia.
73 *Morbidity and Mortality from Certain Communicable Diseases of Childhood as Influenced by Public Health Control. B. F. Royer, Harrisburg.
74 Syphilis of Ear. S. M. Smith, Philadelphia.
75 Visual Disturbances Occurring in Pregnancy. G. E. Curry, Pittsburgh.
76 Perisinuous Abscess and Sinus Thrombosis. H. M. Becker, Sunbury.
77 Radium in Military Surgery. W. H. Cameron, Pittsburgh.

68. Abstracted in THE JOURNAL, Oct. 23, 1915, p. 1484.

69 and 71. Abstracted in THE JOURNAL, Oct. 16, 1915, pp. 1400 and 1401.

70 and 72. Abstracted in THE JOURNAL, Oct. 23, 1915, pp. 1482 and 1483.

73. Abstracted in THE JOURNAL, Oct. 30, 1915, p. 1578.

Vermont Medicine, Rutland

February, I, No. 2, pp. 29-60

78 Biliary Tract. E. H. Ross, St. Johnsbury.
79 Infantile Paralysis in Vermont. R. W. Lovett and E. G. Martin, Boston.

March, No. 3, pp. 61-92

80 New Concept of Diseases Having Emotional Elements. W. B. Cannon, Boston.
81 First Aid to Uninjured. E. J. Melville, St. Albans.

Wisconsin Medical Journal, Milwaukee

April, XIV, No. 11, pp. 453-486

82 Schick Test in Milwaukee Health Department Work. L. Schiller, Milwaukee.
83 Nondiabetic Acetonemia. M. R. Wilkinson, Oconomowoc.
84 Some Acute Abdominal Emergencies. D. R. Connell, Beloit.
85 Focal Infections and Their Relation to Diabetes. H. P. Greeley, Waukesha.
86 Work of Robert Barany on Semicircular Apparatus of Ear and Cerebellar Localization as Diagnostic Key to Different Intracranial Conditions. F. Pfister, Milwaukee.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Tuberculosis, London

April, X, No. 2, pp. 51-110

1 Crippled Tuberculous Children. H. J. Gauvain.
2 Infection in Tuberculosis. T. Shennan.
3 *Examination of Contacts at Tuberculosis Dispensary. N. Robertson.
4 Bedroom of Consumptive. G. Jessel.

3. **Examination of Contacts.**—Robertson insists that a tuberculosis dispensary should be a place for the continued observation of contacts. The examination of contacts should therefore be very complete and thorough. A contact in perfect health, unless asked, will rarely volunteer the informa-

tion that he or she has had a hemoptysis or pleurisy years ago. The local dulness, retraction, or bronchial breathing found on examination of the chest will be explained and regarded as a possible lurking source of future trouble, and requiring watching from time to time. First, careful history-taking is essential. Second, careful questioning as to present symptoms, however slight, must be insisted on. third, careful physical examination must be made. If dubious signs are noted, the other more laborious tests may have to be applied. Frequent observation requires the keeping of records of all contact cases very accurately. Out of 464 contacts examined, 40 per cent. gave doubtful physical signs of active pulmonary tuberculosis, 13 per cent. positive physical signs. Of these 7 per cent. were positive at first visit, and 6 per cent. doubtful became positive. Forty per cent. gave negative physical signs, and 5 per cent. having doubtful physical signs became negative. All together, 51 per cent. had, therefore, doubtful physical signs of active pulmonary tuberculosis in the total 464 contacts.

British Medical Journal, London

March 25, 1, No. 2882, pp. 437-472

5 Case of Bilateral Motor Apraxia (Traumatic) With Disturbance of Visual Orientation. S. Smith and G. Holmes.
6 Mental Conditions Following Strain and Nerve Shock. R. G. Rows.
7 *Mental Symptoms Complicating Case of Acute Tetanus During Treatment by Phenol Injections. J. Everidge.
8 Case of Acute Gangrenous Cholecystitis With Spreading Peritonitis. J. Morley, F. B. Smith and W. Campbell.
9 *Removal of Intracranial Foreign Body Under Roentgen Rays. J. R. Lee.
10 Paracholera. A. Castellani.
11 *Case of Chronic Nontuberculous Peritonitis in Child. C. Worster-Drought.

April 1, No. 2883, pp. 473-508

12 Toxicology of Salvarsan. W. H. Willcox and J. Webster.
13 *Case of Gas Gangrene Exhibiting Unusual Proofs of Blood Infection. G. T. Mullally and J. W. McNee.
14 Amputations at Base Hospitals in France. C. G. Watson.
15 After-Treatment of Amputation Stumps. C. W. G. Bryan.
16 Treating Gunshot Fractures by External Fixation Apparatus. B. S. Simmonds.
17 *Dysenteric Arthritis. T. G. Moorhead.
18 *Preliminary Note on Disease of the Gold Coast Called "Bungpagga." C. R. Patton.
19 *Observation in Pernicious Anemia. O. Leyton.

7. **Mental Symptoms Complicating Acute Tetanus During Treatment by Phenol Injections.**—In the case cited by Everidge the convulsions were controlled by chloral and bromid. Whenever he was allowed to come round at all the spasms became intense. As the spasms became less severe, he was treated less energetically with hypnotics. The mental condition now began to show a marked change. He became extremely restless and passed into a state of low, muttering delirium, with visions and hallucinations—a condition closely resembling delirium tremens. From time to time he attempted to get out of bed, and had to be forcibly restrained. This lasted for five days, during which time he had incontinence of urine and feces. Chloral and bromid, which had previously quieted him, had now no effect. After four four-hourly doses of half a dram of paraldehyd, however, he settled down into a quiet sleep. After nine days the mental condition appeared normal, but on the tenth day there was a bad relapse. This lasted acutely for three days, but it was not until ten days later that the mental state again became normal.

9. **Intracranial Foreign Body Removed Under Roentgen Rays.**—In Lee's case a piece of shell was located in the occipital lobe by means of the Roentgen rays and removed with the electromagnet.

11. **Chronic Nontuberculous Peritonitis.** — Worster-Drought's patient was only 4½ years of age; he had suffered from no previous illnesses excepting measles. As a baby he had been fed on cow's milk. The history of the beginning of his illness was indefinite. For about four months he had complained of pain in the "stomach" and occasionally vomited after food; there was no diarrhea. The abdomen during this period had become larger and larger and loss of flesh had been considerable. There was no suggestion of injury. The chest, face and limbs were very emaciated; the abdomen was large and prominent. The heart and lungs appeared quite normal; pulse 90, respirations 28, temperature 98.8. A large amount of ascitic fluid was present; there was no pain even on firm pressure. The condition was diagnosed as tuberculous peritonitis. Von Pirquet positive. The temperature suddenly went up to 100 and a purpuric rash appeared over the chest and arms. A few hours later the boy became comatose and died the next morning. The necropsy afforded no evidence of tuberculosis. In the abdomen was a fairly large quantity of fluid and numerous adhesions; the visceral and parietal peritoneum was enormously thickened. No enlarged glands were found either in the abdomen, mediastinum, or neck; there was no sign of tuberculous ulceration of the intestine. The heart and lungs were normal, but the stomach wall was very thick. The spleen was soft and not enlarged; the liver indicated chronic congestion; the kidneys, brain and meninges were normal.

13. **Gas Gangrene Exhibiting Proofs of Blood Infection.**—A soldier was wounded by a bullet which entered the right arm, fracturing the humerus. Gas gangrene developed in this wound two and a half days after the injury. As the man passed through a field ambulance he received the usual antitetanic injection below the left nipple, and was thereafter evacuated at once to a casualty clearing station. The next day he complained of pain at the site of the serum inoculation, and within twenty-four hours a definite patch of gas gangrene had appeared there. The day after admission to the casualty clearing station, a hypodermic injection of pituitary extract was made into the left forearm to combat collapse. Two days later the site of this puncture showed also an area of gas gangrene. From these three places (right arm, left pectoral region and left forearm) and also from the blood the same type of gas forming organism was isolated by the authors by cultures. This organism was of the "malignant edema" type, most of the bacilli showing central spores. The arm was amputated and the man made a good recovery.

17. **Dysenteric Arthritis.**—Moorhead urges that in all cases of arthritis occurring in troops a history of dysentery should be inquired for, and, if such a history is obtained, a course of emetin should at once be ordered. In his experience of six recent cases emetin clears up the arthritis most rapidly after other treatment failed. In four out of the six cases there was definite proof that amebic dysentery had been present, either by the finding of amebae in the stools at the time the arthritis was present, or owing to the fact that the patient had been previously treated in this hospital for amebic dysentery, and that amebae had been found at the time of this treatment. In two cases the history of dysentery while at the peninsula was quite definite, but Moorhead had no means of determining whether the dysentery had been of the amebic or bacillary variety. One of these cases—a bad one—was given both serum and emetin; the other was treated by emetin alone, and both rapidly recovered.

18. **Disease of the Gold Coast Called "Bungpagga."**—This appears to be a micro-organismal infection which produces a neurotoxic effect as well as a local reaction. In every pus slide examined by Patton he found a heavy infection of saccharomyces. Cultures showed a true fungus growth. Patton is of the opinion that grain becomes infected in the bin, the people eat the grain raw, and being usually constipated, their intestines are secondary incubators. The yeast cells are probably absorbed from the intestine somewhat in the same way as fat is by migratory leukocytes, and hence into the general circulation. The definite incubation period appears to be three days, during which there is malaise, headache, a sense of fatigue, anorexia, intense thirst and constipation. The onset is sudden; rigors may usher in the attack. The temperature rises rapidly to 103 or so. There is extreme tenderness in the muscles. Within twelve hours painful tumors make their appearance in the affected muscles; the abscesses seem always to occur near their insertions. There may be only one nodule, or a crop. In some cases the distribution is bilaterally symmetrical. The

tumors are deep seated; they are hard, nonfluctuating, very painful, with their long axes either in or parallel to the long axes of the muscles affected. They do not correspond to lymphatic glands. Each tumor is about the size of an hen's egg. They are at first hard and firm, and are easily visible and palpable; later on, if the patient survives they become slightly soft, but never flabby. Usually, in mild cases, the abscesses point after some weeks, and burst if unopened. As a rule, the fewer the nodules the better the prognosis. If the patient survives the acute stage he stands a good chance of recovery. The deaths usually occur within the first week, the third and sixth days seeming to be the most critical. Even during convalescence (for two months or more) the patient exhibits an occasional febrile reaction.

19. **Pernicious Anemia.**—Leyton transferred some blood from a patient suffering from erythema to a patient who had pernicious anemia, and at the same time injected into the erythremic patient some blood from the case of pernicious anemia. After a small quantity, 2 ounces of blood had been injected into the man suffering from pernicious anemia, he grew paler; he complained of nausea and faintness, and the injection was immediately stopped. He then became slightly flushed in the face, and made grimaces as if he were undergoing pain. On being asked, he stated that he had pain all over him, something like cramp, quite severe; this lasted for a minute and then disappeared and he was soon quite comfortable. Examination of the blood a week later showed that the red cells had risen from 600,000 to 1,050,000, and the hemoglobin percentage from 10 to 20. Five weeks later Leyton transferred 8 ounces of blood. The symptoms produced were similar to those produced on the former occasion, but much more severe. The patient vomited for close on half an hour, and for a time gave rise to some anxiety due to the strain thrown on his heart. The after-effects were not satisfactory, neither the number of red cells nor the quantity of hemoglobin being increased to any large extent.

Lancet, London

April 1, I, No. 4831, pp. 711-758

20 Gunshot Wounds and Injuries of Spinal Cord; Report of Cases. J. Collier.
21 Dissociation of Cutaneous Sensations in Injuries to Peripheral Nerves. D. E. Core.
22 Gunshot Injuries of Peripheral Nerves; Syndrome of Compression; Report of Cases. J. S. B. Stopford.
23 Investigations of Strains of Tubercle Bacilli Derived From Sputum. A. S. Griffith.
24 Pain in Renal and Vesical Lesions. (To be continued.) D. Newman.
25 Simple Percentage Chloroform Inhaler. C. T. W. Hirsch.
26 Case of Eclampsia With Triplets, Two of Children Being United. R. Jardine.
27 Case of Full Term Extra-Uterine Pregnancy; Operation. J. F. Devane.
28 Food Economics in Relation to War. H. Campbell.

Archives des Maladies du Cœur, etc., Paris

March, IX, No. 3, pp. 93-140

29 *Cardiovascular Symptoms and Complications of Paratyphoid Fever. J. Carles and R. Marcland.
30 *Obstruction of the Mesenteric Vessels. (De l'obstruction des vaisseaux mésentériques.) E. Pallasse.

29. **Cardiovascular Symptoms in Paratyphoid Fever.**—Carles and Marcland have made a special study of the behavior of the pulse, blood pressure and cardiovascular system in general during paratyphoid infection. The pulse does not parallel the temperature but keeps low in the milder cases. When it was not above 80 during the first few days, the disease lasted only sixteen days on an average. The duration was over twenty-five days in 30 per cent. of the cases with a pulse of 85; in 50 per cent. with 90 pulse, and in 60 per cent. with pulse of 100. The pulse is thus an important element in the prognosis; none of the men died with pulse under 100. This slow pulse differentiates paratyphoid from typhoid, and any change from this comparatively slow type warns of complicating trouble. The arterial tension is less characteristic, but it throws light on the way the heart is behaving. Pericarditis, myocarditis and endocarditis were rather frequent in the paratyphoid cases, and entailed collapse and sudden death in some instances. The heart must therefore be watched over with special care during paratyphoid, and assistance be given it at the slightest sign of its weakening. Arteritis is very rare; phlebitis is more common but has no characteristic features.

30. **Obstruction of Mesenteric Vessels.**—Pallasse states that there are about 373 cases on record of obstruction of mesenteric vessels, of the veins in 41 per cent., arteries in 53, and both in 6 per cent. of the total cases. The condition was diagnosed correctly in only 13 cases, and operative treatment, applied in 69 cases, saved only 25 of the patients, that is, 36.2 per cent. Left to itself the outcome is nearly always fatal although cases are known of spontaneous recovery. Resection of the stretch of intestine involved was the usual intervention.

Lyon Médical, Lyons

March, CXXV, No. 3, pp. 65-104

31 Organization of the Army Medical Department in the Present War. (Les formations sanitaires dans la guerre actuelle.) Jullien.
32 *Perforating Gastric Ulcer. (Ulcères pénétrants de la petite courbure de l'estomac et leur thérapeutique.) Guilleminet and Guérin.
33 The Crossed-Leg Sign of Abnormally High Blood Pressure. (Le signe de la "jambe croisée" dans l'hypertension artérielle.) Molle.

32. **Perforating Gastric Ulcers.**—The surgeons of Lyons are particularly in favor of annular pylorogastrectomy for ulcers in the lesser curvature, even when there are adhesions to other organs. These ulcers are distinguished by the tendency to bore deep and to pull the stomach out of shape. In the latest two cases, here reported, the stomach had been drawn into a symmetrical hour-glass shape and the pancreas, closely adherent, formed the floor of the perforated ulcer. The debility was so extreme that the resection and anastomosis were done at two sittings, but they were borne so perfectly that they might have been combined in a single operation. The ultimate outcome in cases of this kind after pylorogastrectomy or mediogastric resection has been most excellent, in their experience, there being no return of trouble in any instance.

Paris Médical

March 25, VI, No. 13, pp. 305-320

34 *Diagnosis and Prognosis of Paratyphoid Infection. (Etude comparative des fièvres paratyphoides et de la fièvre typhoïde.) L. Rimbaud.
35 Necessity for Special Services for Digestive, Infectious and Respiratory Affections. (La spécialisation nécessaire des services par appareils.) G. Rosenthal.
36 Intracranial Hemorrhage. (Ictus apoplectique.) Faivre.

34. **Paratyphoid.**—Rimbaud applied bacteriologic tests to the blood in 730 cases of apparent typhoid and obtained a positive result in 355 cases, including 163 with typhoid, 138 with paratyphoid A and 54 with paratyphoid B bacilli. The paratyphoid cases were incomparably milder than the true typhoid; complications were rare and mild. There was perforation of the bowel in only one of the 192 paratyphoid cases; but phlebitis developed in 3 cases. In his experience the heart was practically never involved and the course of the disease was brief. The mortality in the 163 typhoid cases was 27.6 per cent. and 4.6 per cent. in the paratyphoid cases. Sero-agglutination is instructive, but cultivation of the bacilli from the blood is the only means for exact differentiation. Convalescence is very slow; an attack of paratyphoid incapacitates a man for military service for three months at least.

Presse Médicale, Paris

March 23, XXIV, No. 17, pp. 129-136

37 Sinusitis From War Wounds. (Les sinusites de la face par projectiles de guerre.) Guisez and Oudot.
38 Laceration of the Lung From Explosion Near By. (Les traumatismes indirects du poumon déterminés par l'éclatement à proximité des gros projectiles de guerre.) L. Binet.

Berliner klinische Wochenschrift

March 27, LIII, No. 13, pp. 329-356

39 Calories and Bulk of Hospital Menu. (Ueber die Ernährung im Lazarettbezirk Breslau.) G. Rosenfeld.

40 *Perforation of Uterus With Prolapse of Intestine. (Uterusperforation mit Darmvorfall.) F. Heimann.
41 *Early Diagnosis of Progressive Paralysis. A. Piotrowski.
42 Improved Technic for Roentgen Work. (Die Röntgenstrahlenerzeugung in der neuen gasfreien Röhre und Spezialapparate zu ihrem Betriebe für Diagnostik und Therapie.) K. Lasser. Concluded.
43 Emergency Glasses to Combine Close and Distant Vision. (Zeitweisser Ersatz von Gläsern mit gemischtem Schliff durch Brille mit Vorhänger.) H. Bergemann.
44 *Medicolegal Decisions. (Aerztliche Rechtsfragen.) H. Lieske.

40. **Perforation of Uterus After Abortion.**—In the case described by Heimann, Winter's abortion forceps were used to extract fragments of placenta left after an abortion of three months, as they could not be reached with the finger. When drawn out it was found that the forceps had seized a loop of intestine. The woman was removed to the hospital and the loop resected through a laparotomy and the uterus sutured. Smooth recovery followed, showing that the wisest course had been pursued, there being no infection at the moment.

41. **Early Diagnosis of Progressive Paralysis.**—Piotrowski reports two cases in which, as in Nonne's case in 1914, the diagnosis of progressive paralysis was based exclusively on the serologic findings in the cerebrospinal fluid. In one case neurasthenia with a tendency to depression, with a history of syphilitic infection eleven years before, was revealed as incipient progressive paralysis by the Wassermann reaction in blood and fluid and the lymphocytosis and positive Nonne reaction in the fluid. The diagnosis was confirmed by necropsy after suicide. In another case the fluid alone gave a positive Wassermann reaction but this was enough to relieve the man of criminal responsibility for a misdemeanor although there was no history of syphilis and the blood did not respond to the Wassermann test. The man had been under treatment for nephritis, gastric catarrh, neurasthenia and hystero-hypochondria. The further course of the case confirmed the diagnosis based on the Wassermann reaction in the fluid. In the third case nothing could be found to explain the man's complaints—which were ascribed to neurasthenia and hypochondria—until the Wassermann reaction was found positive in the cerebrospinal fluid. Vigorous treatment for syphilis was at once instituted, and the condition has remained stationary. There can be no doubt that there is incipient progressive paralysis in this case also, although to date this assumption has not been confirmed by a progressive course or by necropsy as was possible in the other cases.

44. **Medicolegal Questions.**—Lieske relates a number of recent court decisions affecting physicians. One suit that has attracted attention was brought by an accident insurance company against a woman "professional bone-setter" who had treated a fractured femur for a farmer in a most unscientific manner. The company paid the farmer his weekly accident allowance for the usual period but he was then still 75 per cent. incapacitated instead of the 50 per cent. expectancy disability. The insurance company then sued the woman bone-setter for damages and won the suit.

Jahrbuch für Kinderheilkunde, Berlin

December, 1915, LXXXII, No. 6, pp. 435-510

45 *Treatment of Rachitis. VIII. E. Schloss. To be concluded.
46 *Pyelocystitis in Infants. (Ueber den Weg der Infektion bei der Pyelocystitis der Säuglinge.) G. J. Huet (Gravenhage).
47 *Sensory Disturbances in Paralysis After Diphtheria. (Sensible Störungen bei postdiphtheritischen Lähmungen.) Z. Barabas.

45. **Rachitis.**—In this eighth instalment of his long report of his comprehensive research on fourteen infants, Schloss tabulates the findings under new headings to show the influence of breast feeding, of albumin milk, and of fat milk, in connection with calcium and cod liver oil. The new classification affords better insight into the conditions. The concluding instalment is to follow, but he already emphasizes here that no benefit from the addition of phosphorus to the cod liver oil was ever apparent. Hence he has dropped phosphorus from the treatment of rachitis. Neither calcium alone nor cod liver oil alone displayed any special efficacy, but the combination of the two, with breast milk, gave the most favorable results both during the treatment and after its suspension. The calcium in the form of dicalcium phosphate or tricalcium phosphate seemed to give the maximum effect.

46. **Pyelocystitis in Infants.**—Already summarized in these columns, March 25, 1916, p. 993.

47. **Sensory Disturbances with Postdiphtheric Paralysis.**—In eight of sixteen children with postdiphtheric paralysis the sensitiveness of the skin to pain was considerably if not entirely abolished while the sensations of heat, cold and touch were apparently unimpaired. This dissociated sensory paralysis has been known only with a few diseases, syringomyelia and tabes, and in these the loss of the sensation of pain in the skin is permanent, while it was only transient in the diphtheria cases described. It was a casual discovery as it was noticed that one child who was being given strychnin by subcutaneous injections presented his arm each time spontaneously and did not shrink from nor seem to feel the prick.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

November, 1915, XLII, No. 5, pp. 389-476

48 Histologic Examination of Tissues After Intravenous Injection of Colloidal Metals. (Histologische Untersuchungen an mit intravenösen Injektionen kolloidaler Metalle behandelten Fällen.) R. Schindler.
49 *Parametritis and Paravaginitis With Retrocervical Bunches of Proliferating Epithelium. (Ueber Parametritis und Paravaginitis posterior mit heterotoper Epithelwucherung — Adenomyositis uteri et recti.) A. Mayer.
50 *Local Anesthesia for Extensive Vaginal Operations. (Zur Anwendung der Lokalanästhesie bei grösseren vaginalen Operationen.) H. Thaler.

December, No. 6, pp. 477-565

51 Insufficient Labor Contractions and Oxytocics. (Wehenschwäche und Wehenmittel.) P. Hüssy.
52 *Fibro-Adenomatous Rectocervical Serositis. (Ueber Fibroadenoma fornicale.) J. A. Amann.
53 *Indications for Cesarean Section. (Kaiserschnitt.) L. Mandl.
54 *The First Fifty Years of the Obstetric Forceps. (Notizen über der Wertschätzung und Benutzung der Geburtszange im ersten halben Jahrhundert nach ihrer Einführung in die Geburtshülfe.) E. Ingerslev (Copenhagen).

49. **Paravaginitis with Retrocervical Tumor Bunches.**—Mayer has encountered five cases of a peculiar tumor-forming inflammatory process in the tissues between the rectum and the genital organs. R. Meyer called attention to this affection seven years ago, as "posterior paravaginitis and parametritis with proliferation of epithelium." The cases of uterine adenomyomas spreading to involve the rectum probably belong in this category. Mayer describes in detail his most extensive and serious case. The patient applied for relief from intolerable pains which had been ascribed to hysteria as nothing had been found to explain them. He palpated a bunch back of the uterine cervix, involving the rectum. Some smaller bunches could be felt also on or near the sacro-uterine ligaments. On account of possible malignancy, the whole, with the tumors, was excised. Polyp-like proliferation occurred later, removed on two different occasions, one of the tumors growing as large as a fist, and suppurating. Since this last tumor retrogressed after draining there has been no further disturbance. The patient was a primipara of 31. In this and his other cases the tumors evidently had started in the serosa. They were not actual neoplasms but inflammatory hyperplasia which subsided when the main tumor was removed. He did not attempt extensive excision, as for cancer, and none of his patients developed malignant recurrence. With this adenomyositis, the rectal mucosa may bulge but it is intact, smooth and freely movable, while there is no tendency to hemorrhage, and the bulging is always in the anterior wall. Tuberculous nodules in the pouch of Douglas are generally smaller and more regular in size, and the connective tissue is less involved. Mayer found nothing to suggest either tuberculosis or gonorrhea in his cases. The histologic findings and the literature are discussed in great detail. See abstract 52.

50. **Local Anesthesia for Extensive Vaginal Operations.**—Among the operations described were five of Schauta's enlarged vaginal operation for uterine cancer, all done under local anesthesia. The nerves of the region can be blocked

by injecting a 0.5 per cent. solution of novocain into the tissues around the uterus. The patient is rendered drowsy with some sedative beforehand to spare her the emotional shock of the operation, but otherwise the reliance is exclusively on the blocking anesthesia in the parametrium. The Schauta technic was applied with perfect success to a woman of 69, extremely debilitated, with arteriosclerosis and degeneration of the heart muscle. The carcinoma on the uterine cervix was in an operable stage and it was removed without mishap and almost totally without pain or loss of blood. The only pain experienced was during traction on the adnexa. The separation of the bladder and ureters was particularly easy in all the cases on account of the epinephrin injected with the anesthetic. He injected 10 c.c. of the anesthetic subcutaneously in turn into the perineum, labia majora and left paravaginal region, and then into the labia minora, rectovaginal septum (to a depth of 6 cm.) and into the left ischiorectal adipose tissue. The uterus was then blocked by injecting 10 c.c., 5 cm. deep, where the vagina joins the uterus on each side. Then 10 c.c. was injected between the uterus and bladder and to a depth of 5 cm. in the pouch of Douglas. The anterior vaginal wall was further infiltrated to a depth of 5 cm. After waiting twelve minutes, the vagina was painted with iodin again and the operation was commenced with a left paravaginal incision, and was completed in forty-six minutes. No after-pains were felt until evening, and the woman was dismissed in six weeks.

52. **Fibro-Adenomatous Serositis.**—Amann describes a case of retrocervical fibro-adenomatous serositis in a woman of 37, and a similar process encircling the sigmoid flexure in another woman. He refers also to two similar cases in which an exploratory incision revealed a similar process fifteen and eighteen years ago. As there was no disturbance on the part of either the uterus or rectum in these last two cases, he refrained from operating, and repeated examinations since have shown very little change in the benign process. He has also encountered two cases in which the inflammatory process formed a single inflammatory process—a single adenomyoma—and three others in which the process was flat and diffuse. In all these latter the uterus was bound down in retroflexion by adhesions that had to be cut to release it. Notwithstanding the nonmalignant character of the process, operative measures are usually inevitable on account of compression of adjacent organs, especially of the intestines, and severe pain. The affection is practically the same as that described in abstract 49 above, and Amann's conclusions are the same as Mayer's.

53. **Cesarean Section.**—Mandl delivered by cesarean section a woman with a shallow, moderate sized pelvis after labor had lasted for thirty-six hours and the lower segment of the uterus was stretched with face presentation until rupture seemed imminent. In a second case, threatening symptoms from chronic heart disease were the indication for cesarean section when labor had lasted for thirty-two hours without the cervix opening more than for a finger. In another case all was made ready for cesarean section as the woman's pelvis was contracted and she longed ardently for a child. Delivery proceeded apparently normally, however, by the natural route. The child died in a day or so and necropsy showed signs of traumatic injury in the brain. Such were found also in an infant delivered by pubiotomy. Another woman with contracted pelvis who had already had two stillbirths, was delivered by cesarean section at the first labor pains. The bag of waters had ruptured and there was prolapse of the umbilical cord, but the child was safely delivered by the section. Mandl cites Couvelaire's experience that 42 per cent. succumbed of 31 infants with prolapse of the cord. In 23 cases efforts had been made to replace the cord, but they proved successful in only 6, and he advises cesarean section at once in case of failure. In considering it, Mandl emphasizes that we must draw the line between cases that have been exclusively in our hands and those that come to us haphazard or are brought for institutional care at the last moment. Statistics show, he declares, that the dangers of cesarean section are scarcely greater for the mother than induced premature delivery, version or high forceps.

54. **History of Obstetric Forceps.**—Ingerslev quotes Boer's remark in 1804 that the one who invented obstetric forceps benefited humanity more than all the heroes of the ancient and modern world, and yet no special memorial has been raised to him. Peter Chamberlen is said to have invented the forceps at the beginning of the seventeenth century in England, but he kept them for the personal use of himself and son. Ingerslev sketches the phases of evil and good repute through which the forceps have passed, devoting thirty pages to the subject.

Gazzetta degli Ospedali e delle Cliniche, Rome

March 23, XXXVII, No. 24, pp. 369-384

55 Present Status of Treatment of Infected Wounds. (Il concetto biologico della curabilita delle ferite inquinate.) E. Bertarelli.

56 *Spontaneous Pneumothorax. (Contributo alla terapia del pneumotorace spontaneo.) A. Pisani.

March 26, No. 25, pp. 385-400

57 Paratyphoid. (Osservazioni e ricerche sul paratifo.) E. Carati.

56. **Treatment of Spontaneous Pneumothorax.**—Pisani reports the fourth case on record in which a spontaneous pneumothorax was effectually cured by counter pressure from injected nitrogen, with the same technic as for induced artificial pneumothorax. The perforation in the lung tissue is closed by the pressure from the gas, and as its edges are thus held together, they soon grow together. This closing of the fistula also prevents the further irruption of septic matters from the lung into the pleura, and any tendency to pleuritis subsides. Morelli suggested in 1911 this method of treating natural pneumothorax by the technic for artificial pneumothorax, first aspirating some of the air if necessary. This has the disadvantage, however, of tending to suck more septic matters out into the pleura. Pisani has had four other patients with spontaneous pneumothorax for whom he considered this method of treatment, but conditions rendered an artificial pneumothorax impracticable. In his successful case a man of 24 with a rapidly progressing tuberculous lesion in one lung was being treated with artificial pneumothorax when suddenly a spontaneous pneumothorax became superposed on it, and suffocation was imminent. The air and nitrogen were released by punctures but each time the cavity soon filled up again with air. After nine days of this, Pisani injected 800 c.c. of nitrogen, the pressure being transformed from minus 5 to plus 11. This closed the opening into the lung completely and permanently, and compressed the lung; the spontaneous pneumothorax was cured once and for all, while the gas in the chest is exerting a curative action on the tuberculous cavity. The young man is rapidly regaining health and strength. With spontaneous pneumothorax, Morelli advised to test the pressure of the air inside the chest with a needle connected with a manometer. If the pressure is found very high, some of the air can be allowed to escape, and gas should be injected into the pleural cavity until the pressure keeps at plus 6, 15 or 20 (water). Pisani marvels that this simple and logical method of treating pneumothorax has not been extensively adopted since Morelli reported his four successful cases in 1911.

Policlinico, Rome

March 26, XXIII, No. 13, pp. 389-420

58 *Objective Signs of Sciatica. (Per l'accertamento medico-legale della ischialgia.) G. Boschi.

58. **Objective Signs of Sciatica.**—Boschi says that the way of walking, of sitting down, bending over and other movements are unmistakably characteristic of sciatica, but a good mimic could simulate them. The loss of the gastrocnemius reflex suggests actual neuritis, and other signs of a true nervous affection are a certain accentuation of the tendon reflexes, localized hypothermia, hypotrophy from functional inertia, tendency of the spine to curve away from or toward the side of the sciatica, greater depth of the gluteal groove on that side when erect, an evening rise in rectal temperature and increased albumin content of the cerebrospinal fluid. The most instructive sign is when the pupil reflexes, pulse pressure and pulse beat are noted on the reclining patient, and are then recorded again while the limb is flexed until pain begins

to be elicited even in the healthy. Tracings are given showing the profound disturbance in all these vital reactions when the leg with sciatica was flexed, and the normal, even tracings when the sound leg was flexed.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

March 18, II, No. 12, pp. 961-1056

59 *Treatment of Glaucoma. (Gezichtsvelddefecten in verband met keuze—van operatie methode bij glaucoom.) J. van der Hoeve.
60 *Operative Treatment for Insane Self Inflicted Injury; Two Cases. (Twee gevallen van heelkundige behandeling bij psychopathen.) C. J. van H. Graftdijk.

59. **Treatment of Glaucoma.**—Van der Hoeve describes five typical cases to illustrate the necessity for examining for Bjerrum's scotoma when there is the least suspicion of a tendency to glaucoma, even if the visual acuity and the outer limits of the visual field are normal. Treatment with myotics or sclerotomy can be tried when the patient can be kept under systematic observation, watching over the tension in the eyeball, the contraction of the visual field, including Bjerrum's scotoma, ready to operate at any alarming symptoms. When the visual field is contracted close to the macula, iridectomy is not advisable but contraction of the visual field or scotoma is no contra-indication to Elliot's sclerectomy.

60. **Operations to Remedy Self-Inflicted Injury by the Insane.**—The screwdrivers, nails, coins, etc., removed from the stomach of a man of 32 who had recently become demented, weighed 1,670 gm. in all. In the other case the demented young man pulled out through the anus nearly a yard of bowel mucosa. The lower part had separated from the muscular coats of the bowel, and presented an intact tube of the mucosa lining of rectum, flexure and descending colon.

Hospitalstidende, Copenhagen

March 15, LIX, No. 11, pp. 225-248

61 *Dyspepsia in Chronic Alcoholism. F. Vogelius and G. Wiltrup. Concluded in No. 12.
62 Present Status of Gastropexy. (Nyere Litteratur om Gastropexi.) T. Eiken.

61. **Dyspepsia in Chronic Alcoholism.**—Vogelius and Wiltrup have made a special study of conditions in regard to the digestive processes in twelve hard drinkers who have been under prolonged observation and in forty-five others more recently examined. The findings after an Ewald test meal, repeated from three to eight times in the course of three years, are tabulated for the first group and also the findings with tests for secretion, motor functioning and pepsin digestion and secretion of mucus as applied more recently in the other subjects. Gastritis and achylia are the rule, but a number of factors combine to induce them, not only the liquor but the irregular meals and habits of life of persons addicted to alcohol. Achylia was pronounced in 50 per cent. When they enter the hospital and get regular food and rest, the stomach usually rapidly recuperates and, as the gastritis subsides, the achylia subsides with it. This is similar to the experience with the achylia and apparently pernicious anemia encountered with bothriocephalus latus; both usually retrogress completely after expulsion of the tapeworm. In chronic alcoholism the recuperation proceeds most rapidly and completely in the comparatively young. In a few of the cases tabulated there was a history of syphilis. Nothing was found to indicate that alcoholic gastritis commences with hypersecretion. Study of all this material has shown that determination of the pepsin may be important for the prognosis as the achylia did not retrogress in the few with apepsia. The discovery of inadequate pepsin secretion therefore prophesies permanent achylia. The article is concluded in No. 13.

Norsk Magazin for Lægevidenskaben, Christiania

April, LXXVII, No. 4, pp. 453-588

63 Determination of Sex and Heredity; Research on Grasshoppers. (Om kjønnets bestemmelse og nedarvning.) O. L. Mohr.
64 Typhoid Traced to Milk. (Tyfoidfeber utbredt ved melk.) Y. Ustvedt.
65 Rupture of Intestines From Contusion at Ski Sport. (Subkutan tarmruptur under skiløpning.) S. Widerøe.
66 *Thyroid Tissue in Ovarian Tumor. (Struma thyroidea ovarii.) E. Platou.
67 *Periodical Vomiting With Acetonemia. (Periodiske brækninger med acetonæmi.) T. Frølich.

66. **Thyroid Tumor in Ovary.**—The tumor was removed from a woman of 54 who had seven living children. She had always been in good health until last year when ascites required tapping and a tumor was removed from the left ovary, after which there was no further ascites. The microscope revealed the tumor to be entirely of thyroid tissue, a colloid struma, as large as a goose egg, embedded in the ovary. Bull found some thyroid tissue in 2 of 14 dermoid cysts and Pick in 6 of 21. But in the case here described the tumor consisted apparently exclusively of thyroid tissue with a little ovarian tissue around it and there was nothing to prove a teratoid nature for the tumor. Dingel has compiled 17 similar cases of "ovarian struma" without anything to demonstrate a dermoid nature. No instance of recurrence after removal is known, and no symptoms of myxedema have ever been noted such as might be anticipated if the thyroid tissue had proliferated in the ovary for vicarious functioning. Some of Dingel's 17 patients have been under observation for over four years.

67. **Periodical Vomiting with Acetonemia.**—Frølich has had three cases of this kind in children between 3 and 7, and compares them with the four reported by Griffith in 1910 and those published by Marfan and others. The vomiting attacks may last from a few hours to two or three or even seven weeks, and during the attack the general condition may be grave. Improvement sets in as suddenly as the attack began, and the child is apparently quite well by the next day. Just preceding and during the attack, acetone is eliminated in large amounts in the breath and urine. The attack may be accompanied with fever and there are always thirst and oliguria. In his cases Frølich noted urticaria, herpes, pains in the joints and vertigo during the attacks, and Griffith mentions pruritus and pains in the joints, Comby mucomembranous colitis, and Merklen, tachycardia. Frølich found up to 0.592 gm. acetone in the 400 c.c. urine of the second day in one case, and in another child 1.210 gm. acetone. Albumin has sometimes been found in the urine, but never sugar. One of his patients had pronounced lipuria for three days. One of the children has had six attacks in eight months; the second ten in twenty-four months, and the third, five in six months. The disturbance in the intermediate metabolism responsible for this periodically recurring vomiting does no apparent harm for a time, not until compensation breaks down. The symptoms which precede the vomiting indicate some general metabolic disturbance, the skin and joint disturbances pointing to some central irritating substance, and the sudden onset being analogous to that of gout. Frølich presents evidence to prove that defective utilization of fat as well as of carbohydrates plays some part in the disturbance. Hecker ascribes the greatest share in this periodical acetonemia to retarded development of certain organ-systems or groups of cells which are especially concerned in the digestion of fat. Such children are all the time close to the limit of their digesting capacity for fat. Anything that causes them to step over this limit is liable to bring on a reaction, an intoxication, manifested clinically by vomiting, prostration and elimination of acetone. This assumption affords a working basis for further research on this recurrent vomiting in children. It is certainly more than a coincidence that Frølich's three little patients were all unusually fond of fat and that one of them had pronounced lipuria. The tendency to this periodical vomiting has always been outgrown at puberty, although a few of the patients failed to rally from their prostration. Fatty degeneration of the liver was the main pathologic finding at necropsy. When an attack is impending, a purge is indicated, but after vomiting has commenced, nothing can be given by the mouth. Sodium bicarbonate is theoretically indicated, but it is usually vomited up. In the intervals, however, he gives it regularly, with a diet rich in carbohydrates and scanty in fats. One child has thus been kept free from attacks for twelve months to date, and the second child for three months, but the other, after an interval of a few months, had a return.

Fig. 1.—Section of Detroit River Front.

THE DETROIT SESSION

AMERICAN MEDICAL ASSOCIATION, SIXTY-SEVENTH ANNUAL SESSION, DETROIT, MICH., JUNE 12-16, 1916

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The sixty-seventh annual session of the American Medical Association will be held at Detroit, Mich., June 12-16, 1916.

The House of Delegates will convene at 10 a. m., Monday, June 12. In the House the representation of the various constituent associations for 1916 is as follows:

Alabama	3	New Hampshire	1
Arizona	1	New Jersey	3
Arkansas	2	New Mexico	1
California	4	New York	11
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	5
District of Columbia	1	Oklahoma	2
Florida	1	Oregon	1
Georgia	3	Pennsylvania	9
Idaho	1	Rhode Island	1
Illinois	9	South Carolina	1
Indiana	4	South Dakota	1
Iowa	3	Tennessee	2
Kansas	2	Texas	5
Kentucky	4	Utah	1
Louisiana	1	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	5	West Virginia	2
Michigan	4	Wisconsin	3
Minnesota	2	Wyoming	1
Mississippi	2	Canal Zone	1
Missouri	5	Hawaii	1
Montana	1	Philippine Islands	1
Nebraska	2	Porto Rico	1
Nevada	1		

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The general meeting, which constitutes the opening exercises of the Scientific Assembly of the Association, will be held at 10:30 a. m., Tuesday, June 13. The various sections of the Scientific Assembly will meet Tuesday at 2 p. m., and subsequently, according to their respective programs.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, June 12, 13, 14 and 15, and from 9 to 10 a. m., on Friday, June 16.

ALBERT VANDER VEER, President.
ALEXANDER R. CRAIG, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state societies are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members who have reported to THE JOURNAL in time to be included:

STATE DELEGATES

ALABAMA
W. H. Sanders, Montgomery.
J. S. McLester, Birmingham.

ARKANSAS
Robert C. Dorr, Batesville.

COLORADO
H. R. McGraw, Denver.
L. H. McKinnie, Colorado Sprgs.

CONNECTICUT
D. Chester Brown, Danbury.
E. J. McKnight, Hartford.

GEORGIA
M. A. Clark, Macon.

HAWAII
C. B. Cooper, Honolulu.

ILLINOIS
Charles Joseph Whalen, Chicago.
Charles E. Humiston, Chicago.
J. M. Pfeiffenberger, Alton.

INDIANA
C. H. Good, Huntington.
Miles F. Porter, Ft. Wayne.
J. Rilus Eastman, Indianapolis.
A. E. Bulson, Jr., Ft. Wayne.

IOWA
J. C. Rockafellow, Des Moines.

KANSAS
W. F. Sawhill, Concordia.

KENTUCKY
A. T. McCormack, Bowling Green.
Milton Board, Louisville.

LOUISIANA
William H. Seeman, New Orleans.

MARYLAND
J. Hall Pleasants, Baltimore.

MASSACHUSETTS
Hugh Cabot, Boston.
B. W. Paddock, Pittsfield.

MICHIGAN
L. J. Hirschman, Detroit.
H. E. Randall, Flint.

MINNESOTA
W. A. Coventry, Duluth.
W. L. Beebe, St. Cloud.

MISSISSIPPI
J. S. Ullman, Natchez.

MISSOURI
E. J. Goodwin, St. Louis.
Robert M. Funkhouser, St. Louis.

MONTANA
J. H. Irwin, Great Falls.
A. R. Mitchell, Lincoln.

NEVADA
M. R. Walker, Reno.

NEW JERSEY
William S. Lalor, Trenton.

NEW MEXICO
S. D. Swope, Deming.

NEW YORK
Grover W. Wende, Buffalo.
William F. Campbell, Brooklyn.
Edgar A. Vander Veer, Albany.
John O. Polak, Brooklyn.
Floyd M. Crandall, New York.

NORTH CAROLINA
John A. Ferrell.
I. H. Manning, Chapel Hill.

OHIO
A. B. Walker, Canton.
H. C. Haning, Dayton.
J. H. J. Upham, Columbus.

OKLAHOMA
Walter Penquite, Chickasha.

OREGON
W. T. Williamson, Portland.

PENNSYLVANIA
W. T. Hamilton, Philadelphia.
Joseph D. Findley, Altoona.
Jesse Y. Scott, Washington.
A. R. Allen, Carlisle.
William F. Bacon, York.
Wilmer Krusen, Philadelphia.
Charles G. Strickland, Erie.
F. L. Van Sickle, Olyphant.

SOUTH CAROLINA
E. A. Hines, Seneca.

TENNESSEE
Jere L. Crook, Jackson.

TEXAS
A. B. Small, Dallas.
Holman Taylor, Ft. Worth.
M. M. Carrick, Dallas.

UTAH
Sol G. Kahn, Salt Lake.

VERMONT
Alan Davidson, St. Albans.

VIRGINIA
R. C. Bryan, Richmond.

WASHINGTON
J. M. Sleicher, Chehalis.
Don Palmer, Seattle.

WISCONSIN
A. H. Levings, Milwaukee.
J. F. Pember, Janesville.
T. H. Hay, Stevens Point.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE
Harlow Brooks, New York.

SURGERY, GENERAL AND ABDOMINAL
Dean D. Lewis, Chicago.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY
P. Brookes Bland, Philadelphia.

OPHTHALMOLOGY
Nelson M. Black, Milwaukee, Wis.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY
George E. Shambaugh, Chicago.

DISEASES OF CHILDREN
H. M. McClanahan, Omaha.

PHARMACOLOGY AND THERAPEUTICS
John F. Anderson, New Brunswick, N. J.

PATHOLOGY AND PHYSIOLOGY
A. W. Hewlett, Ann Arbor, Mich.

STOMATOLOGY
G. V. I. Brown, Milwaukee, Wis.

NERVOUS AND MENTAL DISEASES
Milton B. Lennon, San Francisco.

DERMATOLOGY
Ernest D. Chipman, San Francisco.

PREVENTIVE MEDICINE AND PUBLIC HEALTH
Eugene R. Kelly, Boston.

GENITO-URINARY DISEASES
Martin Krotoszyner, San Francisco.

ORTHOPEDIC SURGERY
John Ridlon, Chicago.

DETROIT AND ENVIRONS

The History and Description of the Convention City

DETROIT THE DYNAMIC

In 1850 there were 21,000 inhabitants in Detroit; in 1880, 116,000; in 1900, 285,000, and in 1915, 750,000. In 1900 the area of the city was 28 square miles; today it is in excess of 50 square miles. It is now seventh in population in the United States.

HISTORY OF DETROIT

Detroit is one of the old cities of the continent. It was founded in 1701 by Cadillac, who headed a small colony of French settlers. The Indians had always called the place Yon-do-ti-ga, "a great village," but the French first gave it the name Fort Pontchartrain. The colonists, however, insisted on calling their new home Detroit, the "City of the Straits." Detroit is one of the few American cities that have been under three flags and under two of them twice. The French occupied this territory until 1760, when they were overthrown by the English. Detroit was again reconquered by General Wayne in 1796. It passed once more under the control of the English in 1813, but their occupancy was very short, as the victory of Commodore Perry on Lake Erie gave the whole Northwest Territory to the United States. In 1805 Michigan was formed into a territory with Detroit as the capital. It was admitted to the Union in 1837, at which date the capital was moved to Lansing. Detroit was destroyed by fire in 1805, really a blessing in disguise, as the result was replanning of the broad streets and provision of a number of parks and public squares which comprise the city beautiful of today. Detroit has never been known as a boom town; its growth and development have been steady for the past 215 years.

Fig. 2.—Detroit and Vicinity.

TOPOGRAPHY

Before the coming of railroads, its splendid river made it an important shipping point. The Detroit River never goes on a rampage; it remains throughout the year at just about the same level. One of the finest fleets of passenger steamers in fresh water in the world hails from this port. Last season they accommodated more than eleven million passengers, three times as many as sailed from all other Great Lake ports combined, without the loss of a single life. More tonnage passes through the Detroit River than any other river in the world. During the season of active navigation there is an average of one boat every eight minutes, either up or down the river.

From its French origin, Detroit is laid out like a French city. The principal streets radiate from the city hall. The crowded thoroughfares, the many large stores, the numerous new skyscrapers, the endless procession of automobiles, the splendid and imposing hotels and countless evidences of wealth and luxury point to the fact that Detroit has joined the ranks of the great cities of the United States. Within the confines of the city there are over thirty parks, with an area of over 1,200 acres. The city has grown miles beyond its splendid grand boulevard, which one time surrounded it from river bank on the east to river bank on the west, affording a beautiful automobile drive of over 12 miles.

BELLE ISLE

Belle Isle, owned by the city, is said to be unequaled in the world as a beautiful island park. Its special attractions include an aquarium with all kinds of fresh and salt water fish, a horticulture

building, one of the best zoological gardens in America, a fine bathing beach, a public bath house with 800 rooms, yacht and boat clubs, casinos, miles of canal for boating, and a splendid boulevard for automobiles, a five and one-half mile shore drive. Unfortunately, the bridge from the mainland to the island, destroyed by fire in May, 1915, has not been rebuilt, so that at present approach to Detroit's island playground must of necessity be by boat. Commodious ferry boats run from Detroit to the island every ten minutes at the nominal fare of 10 cents for the round trip. The work of man has transformed but has not defaced this spot, of which Cadillac wrote over 200 years ago, "We found it richly set with islands as a queen's necklace with jewels, and the beautifully verdant shores of the mainland served to complete the picture of a veritable paradise."

Fig. 3.—BUSY DETROIT. Above: The Campus Martius, showing Woodward Avenue looking North. On the left is the City Hall and the Majestic Building. Middle left: Detroit's Grand Canyon. Middle right: A view in Grand Circus Park, showing, from left to right, the David Whitney Building, Hotel Statler, Hotel Tuller, Kresge Building, and Fine Arts Building. Below: Griswold Street, looking South — called the Wall Street of Detroit.

DETROIT A COMMERCIAL CENTER

Detroit's commercial and industrial prosperity has been as interesting as its growth in population. It received its great impetus in 1910, the year in which the Michigan Central tunnel under the Detroit River was opened. Since then the sum of twenty-two million dollars has been spent in enlarging terminals and increasing transportation facilities within the city.

AUTOMOBILE INDUSTRY

The automobile has done more than anything else to give Detroit "a place in the sun." It is this industry which conferred on the city the title of "Detroit the Dynamic." In 1892 a well known manufacturer built his first model, a two-cylinder motor. Six years passed, however, before any attempt was made to manufacture a motor car. In 1904 Detroit's fame as a manufacturing center for automobiles had become known abroad. One company after another was established, until in 1910 Detroit was manufacturing annually cars to the value of $134,000,000. There are at present thirty-four automobile factories in Detroit, with an estimated output in 1915 in cars of five hundred thousand, with an approximate value of four hundred millions. The thirty-four automobile manufacturing concerns welcome visitors from the outside world, and are always glad to have them inspect the plants that produce automobiles for every country on the globe. The number of people employed in this industry

alone would populate a fair sized city, as there are about 100,000 of them.

OTHER INDUSTRIES

Important and as widely known as is the automobile industry in Detroit, it must not be overlooked that Detroit is prominent in other lines of industry. The city leads in the manufacture of adding machines, pharmaceutical supplies, and in the aluminum industry. It is second in the United States in the production of brass. It is perhaps the largest manufacturing center in this country for stoves, and the second largest fur center in the United States. It has the largest ship building industry on the Great Lakes. In the last five years the gross value of Detroit's manufactured products increased by $150,000,000, or more than 59 per cent. A prominent banker is quoted as saying that he could readily name at least 100 Detroit business men worth a million dollars and over who have accumulated their wealth within the past eight years.

Fig. 4.—Above: The House of the Wayne County Medical Society. Middle left: The Reading Room. Middle right: The Auditorium. Below: The Library Stacks.

EDUCATION

The facilities for education and church attendance are particularly good. The University of Michigan, the state university, is located in Ann Arbor, 40 miles distant, and may be reached by automobile in an hour and a half over a paved road. One of the most efficient normal schools in the United States is situated in the town of Ypsilanti on the Ann Arbor road. Detroit itself is well provided with public and high schools. All denominations are well represented in edifices for worship, and the churches are well attended.

DETROIT TIME

It is difficult to determine whether Detroit is an Eastern or Middle Western city. Perhaps Detroiters themselves are in doubt. For a long while their timepieces were set to Central standard time. A year ago the city adopted Eastern standard time, which is an hour ahead. The change has been adopted with general satisfaction. The city is Eastern so far as time at least is concerned, a fact which the visiting Fellow of the American Medical Association will do well to note, though the railroads continue to operate on Central standard time.

THE WAYNE COUNTY MEDICAL SOCIETY

The majority of the medical fraternity of Detroit are members of the Wayne County Medical Society. This organization is the product of an evolution beginning in 1846, with the organization of the Sydenham Society. This was disbanded three years later when the Wayne County Medical Society was formed as a branch of the Michigan State Medical Society. This organization ceased to exist in 1851, and was succeeded by the Detroit Medical Society, which, after an active career of five years, went out of existence. From 1858 to 1866 there was no local medical society. A second Wayne County Medical Society was founded in 1866. It applied for and received a charter as a branch of the Michigan State Medical Society, Aug. 15, 1902. At this time there combined with it that branch of the profession which separated from it in 1876, and conducted successfully operations through the Detroit Medical Society. Besides, it received the hearty support of the several medical clubs of the city. Under its own name the Wayne County Medical Society began operation sixty-nine years ago. In 1910 the Society bought its new home, 33 High Street East, and four years later built its auditorium capable of accommodating over 500 members. At the nominal fee of $8 per annum, the members have the use of a library of nearly 20,000 volumes and a reading room well provided with current medical literature. In addition to the club features of the organization, the members have the benefits afforded by membership in the Michigan State Medical Society. Meetings of the various sections are held Monday nights. The programs, which are largely the work of the local members, are varied by occasional visits from men of prominence from outside the city. Besides this educational feature, the good fellowship

enjoyed and the promotion of the spirit of *rapprochement* among the membership is a sufficient excuse for the society's being.

MEDICAL COLLEGE AND HOSPITALS

Detroit is the home of the Detroit College of Medicine and Surgery, incorporated in 1868. In 1913, when advanced requirements in medical education demanded something different from the proprietary institution, the stockholders generously consented to a renewal of the charter, and at a critical moment, alumni and other friends of the institution came forward with substantial assistance, and the new organization was incorporated under the educational laws of Michigan, Aug. 19, 1913. It has been founded as a membership organization without profit-sharing stock, all powers and obligations of the corporation being vested in a permanent board of trustees. The Detroit College of Medicine and Surgery is perhaps the only institution of medical education that has access for teaching purposes to all the hospitals of the city in which it is located. It is graded in Class A by the Council on Medical Education of the American Medical Association.

The college has clinical affiliations with the following hospitals: St. Mary's, Harper, Grace, Herman Kiefer, Women's, Providence, the Children's Hospital and Dispensaries, the Samaritan, the Wayne County Asylum, the Detroit Tuberculosis Sanatorium and the Michigan State Tuberculosis Sanatorium at Howell, Mich.

Fig. 5.—Above: House of Providence Hospital. Middle left: St. Mary's Hospital. Middle right: Grace Hospital. Below: Harper Hospital.

HOSPITALS

The hospital capacity of Detroit may be stated as follows: St. Mary's Hospital, founded in 1845, has a capacity of 200 beds, of which 110 are available for clinical teaching; Harper Hospital, founded in 1862, has a capacity of 420 beds, with an an additional accommodation for forty-eight patients at the West Side branch of the hospital; of this number, 266 beds are available for clinical teaching. The Theodore D. Buhl Memorial Outpatient and Laboratory Building, in connection with Harper Hospital, is a model of its kind. Grace Hospital, founded in 1888, has a capacity of 242 beds, with a convalescent branch of fifty beds. The Herman Kiefer Hospital is devoted entirely to public health work, and is owned by the city and managed by the health department

of Detroit. Three hundred and twenty-five patients can be cared for, all of whom are available for clinical teaching. The Women's Hospital has a capacity of 100 beds. Between 800 and 900 confinements take place in this hospital each year. The Providence Hospital has 225 beds for adults, and 200 for children. There are seventy-five beds devoted to obstetrics. The Children's Free Hospital, founded in 1886, has 150 beds, all available for clinical teaching. While all hospitals are easily accessible by trolley, they are removed a sufficient distance from car lines and manufactories to insure quiet. They are all modern in their appointments, either through reconstruction or the fact that some of them have only been recently built. They are open to all reputable physicians in the city.

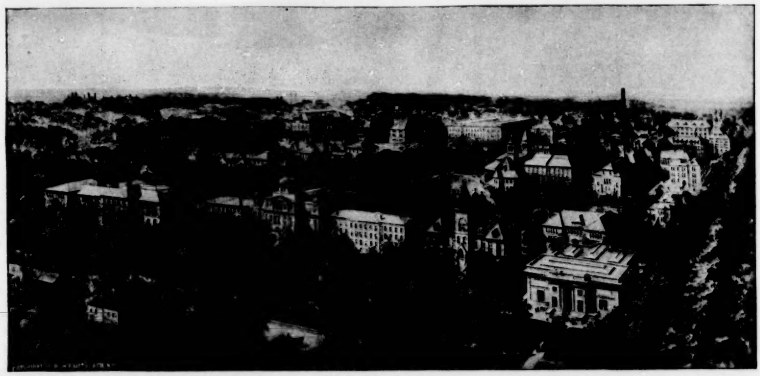


Fig. 6.—The Campus, Ann Arbor.

SIDE TRIPS FROM DETROIT

AN EXCURSION TO ANN ARBOR

The Regents of the University of Michigan and the faculty of the medical school invite members of the American Medical Association and their wives to visit the University, Friday, June 16. As many of the former members of the medical school will attend the Detroit meeting and can easily come to Ann Arbor at that time, the Regents have appointed Friday as a day of reunion for all classes of the school.

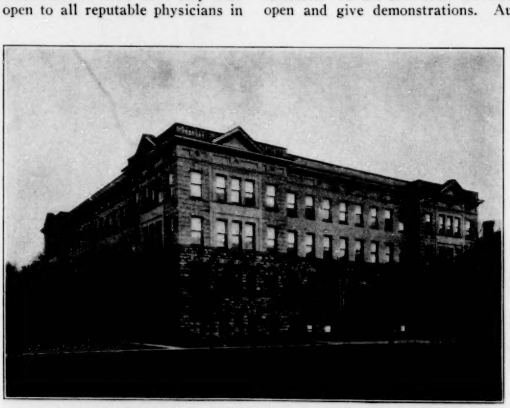


Fig. 7.—The Medical Building, University of Michigan.

A registration bureau for the Ann Arbor excursion will be open at the office in Detroit, until Wednesday evening, June 14. Information will be furnished concerning the expense of the excursion and all details. Those desiring to participate are urged to register promptly, as the number will have to be limited to one thousand. A train from Detroit will carry special cars, and will be met by street cars which go to Memorial Hall on the Campus. A registration and information bureau will be in the alumni room in Memorial Hall, at which visitors can obtain the program of the day, and tickets for the luncheon provided by the Regents. Alumni will be furnished with their class badges and information concerning the places of meeting of the classes and the time of class meetings and class dinners. A committee consisting of wives of members of the medical faculty will meet the ladies, and they and other guides will conduct visitors to the places of greatest interest.

Each of the members of the medical faculty will appoint an hour when he can be seen by his friends. From 10:30 to 12 there will be clinics and demonstrations at the hospitals. At 1 o'clock all will gather at the Barbour Gymnasium for luncheon. In the afternoon the medical laboratories will be open and give demonstrations. Automobile drives will be arranged for those who wish to visit the city. There will be an organ recital in the Hill Auditorium, where the Stearns collection of musical instruments will be open for inspection. Class meetings will be at 4 o'clock, and from 4:30 to 6:30 Dr. and Mrs. Vaughan will give a reception. In the evening there will be class dinners and a general dinner for those who register for the same before Wednesday evening at the Detroit office.

ST. CLAIR FLATS AND TOLEDO

One may enjoy a day's or a half day's voyage northward, passing in full view of Detroit's wonderful city park, Belle Isle; across little Lake St. Clair, through the ship canal; past the Venice of America, popularly known as St. Clair Flats, and thence up the beautiful St. Clair river to the thriving city of Port Huron, sixty miles away, a delightful trip. Or, southbound, one may ride down the Detroit River with its picture of bustling commercial activity on the American side and delightfully situated summer homes on the Canadian side. This trip carries one across the end of Lake Erie and up the Maumee to Toledo, the metropolis of Ohio.

These journeys are made on the steamers of the White Star Line, leaving Detroit daily for Port Huron at 8:45 a. m. and 2:30 p. m. If one desires a fish supper at the Flats, he can leave on the 2:30 boat, and have plenty of time for supper at one of the hotels along the Flats and return on the Steamer *Tashmoo*, arriving at Detroit at 8:45 p. m. The cuisine in

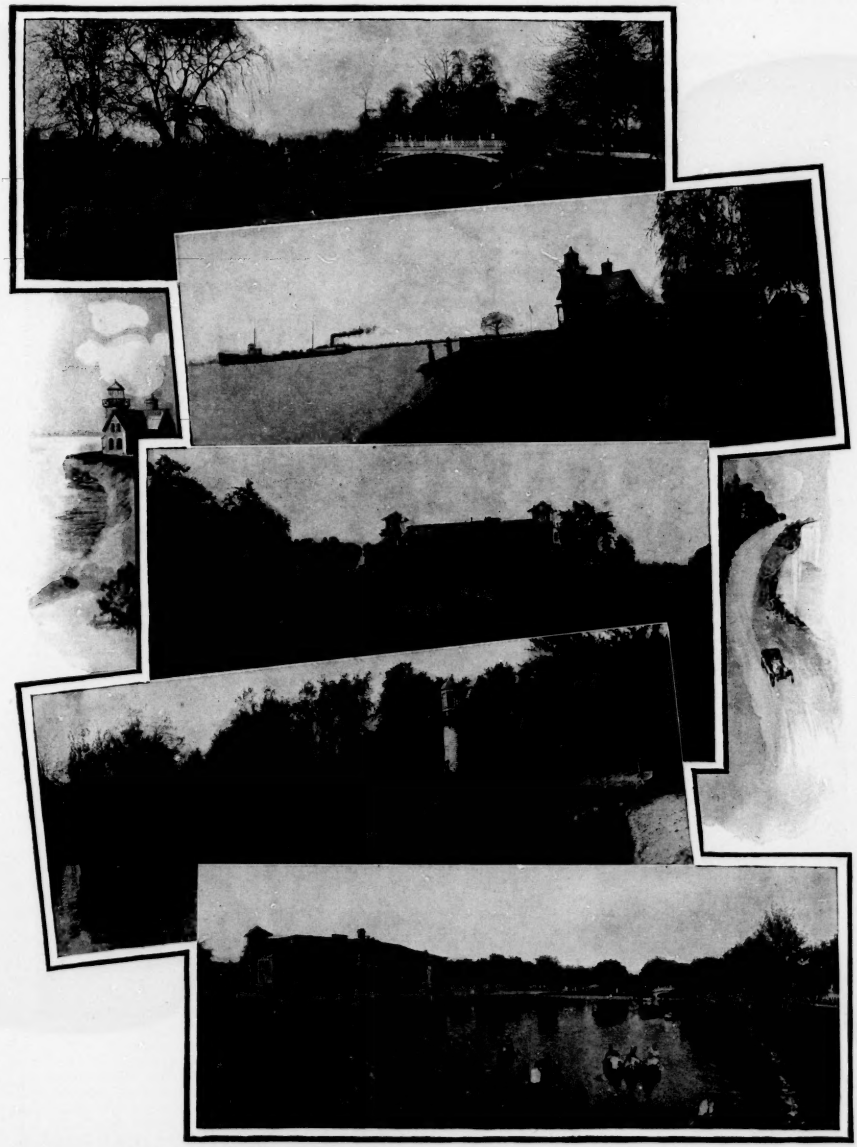


Fig. 8.—Reading from above downward: 1. Canoeists at Belle Isle. 2. Light House at the head of Belle Isle. 3. The Casino at Belle Isle. 4. Palmer Park, with Miniature Light House. 5. The Casino.

the dining room of the *Tashmoo* is excellent. Meals are served à la carte at very reasonable prices. The excursion to Port Huron going and returning on the *Tashmoo* (capacity 3,000 passengers) is not to be overlooked. For one who enjoys an all-day water ride there is no finer trip in the country. The steamer remains at its destination for an hour en route. A stay of an hour and a half is made at Toledo to enable the passengers to see this busy city.

This steamer leaves Detroit every day at 8:30 a. m., Eastern time, arrives at Toledo at 1 p. m., and leaves Toledo at 2:30, arriving at Detroit at 7:15 p. m. Excellent dining room service is maintained on this steamer as well as all

Fig. 9.—Some Detroit Hotels.

and a quarter, thus insuring plenty of time to see the city. Taxicabs and other cars meet each steamer to show the tourists around the city.

Another very attractive all-day ride from Detroit is in the other direction to Toledo. This trip is made on the new steamer *City of Toledo* (capacity 2,000 passengers). There is dancing in the spacious ball room of the steamer while of the other White Star Line boats. In addition to the dining room a good lunch counter is provided on each steamer.

This company also owns and operates two attractive excursion parks, where there are numerous devices for fun and frolic for the picnickers. Tashmoo Park is located on the St. Clair River about 35 miles from Detroit, while Sugar Island lies in the other direction in the lower Detroit river

about 17 miles by water from the city. Here are shaded groves, bathing beaches, baseball diamonds, running tracks, merry go rounds, etc. No liquors are permitted on any White Star Line boat or park. Railroad tickets may be routed via White Star Line steamers from Toledo. For further information, write to C. F. Bielman, Jr., T.P.A., Detroit, Mich., or H. E. Stalker, D.P.A., Toledo, Ohio.

MOUNT CLEMENS

Mount Clemens, "the Bay City," is situated 20 miles north of Detroit, near the shores of Lake St. Clair. It may be reached by either of two trolley lines, and visitors bringing their automobiles have the choice of two excellent roads leading from the metropolis of Michigan to the bath town.

Interurban service is available every thirty minutes, and there are five trains over the Grand Trunk Lines. For the benefit of those desiring to visit Mt. Clemens during the annual session of the Association, at Detroit, the Local Committee on Arrangements has arranged with the Mt. Clemens Hotel for accommodations. Ample garage space has been secured for motorists at reasonable rates.

Mount Clemens is a city of about 10,000, its chief attraction being the mineral water baths. There are ten bath houses and many hotels, several of the latter being among the finest in the Middle West.

For special information address the Mt. Clemens Business Men's Association, or the American Medical Association Hotel Committee, 33 E. High St., Detroit, Mich.

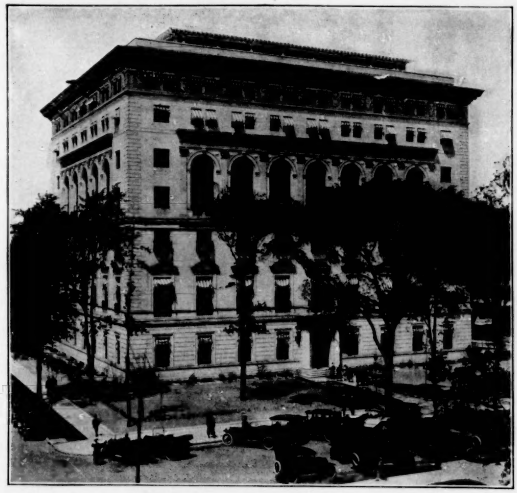


Fig. 10.—The New Home of the Detroit Athletic Club.

PUT-IN-BAY AND CEDAR POINT

Beautiful Put-In-Bay and Cedar Point, "the Atlantic City of the West," are popular places for Detroit residents and visitors during the summer months. Both are located in Lake Erie and are reached from Detroit by the steamers *Put-In-Bay* and *Frank E. Kirby* of the Ashley & Dustin Line. Trips to the Lake Erie resorts are made every morning and evening. The Steamer *Put-In-Bay*, which makes the morning trip and is very popular with excursionists, is large and is luxuriantly fitted with all modern safety devices. Musical programs and dancing are entertainments on the boat, while the passengers are given an excellent opportunity to observe the shipping districts and the large freight steamers that carry iron ore and grain from the north ports.

The Perry Memorial is located on Put-In-Bay Island. It was completed a year ago at a cost of nearly $1,000,000. It has been acclaimed one of the wonders of the Middle West. The shaft of the memorial, which stands 350 feet in the air, is built of white granite. An elevator takes the visitors to the top, from which the view is wonderful. The memorial commemorates the victory of Oliver Hazard Perry over a British fleet in 1813. The battle was fought just off Put-In-Bay.

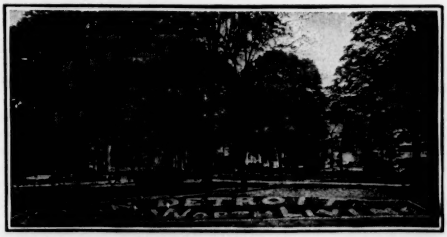


Fig. 11.—In Grand Circus Park.

The bathing beach at Put-In-Bay has a clear, smooth bottom, running far out into the lake, with a depth that increases gradually. The bath houses are of ample size, with large, well lighted dressing rooms. Boating and yachting are pleasures here, and any kind of watercraft may be obtained. Ferry steamers also ply between various islands near Put-In-Bay. There are four gigantic caves in Put-In-Bay, where an almost even temperature is maintained both summer and winter. Glittering stalactites hang from overhead in the caves which have an area of many acres. In some are found miniature lakes of cool, clear water, dark as the fabled Styx.

At the fish hatcheries, excursionists have an opportunity to see millions of fish eggs in glass jars, through which streams of clear, lake water are constantly passing.

Various amusements are furnished on the Midway, while there are baseball grounds and tennis courts for those who are attracted by such pastimes. Cabaret shows as well as a large dance pavilion are popular with the excursionists.

The Steamer *Put-In-Bay* makes trips to Cedar Point from Detroit three times each week, and the summer resort is visited by thousands of excursionists every summer. The usual entertainments are provided, including vaudeville, dancing and bathing. The bathing beach at Cedar Point is famous throughout the country, and rivals the sandy beach at Atlantic City.

The accommodations for visitors are ample, and will suit varying tastes and requirements, from the most luxurious to the most modest. At either Put-In-Bay or Cedar Point are every convenience which would be found at modern hotels in the larger cities.

AN INLAND SEA VOYAGE

The six day cruises of the *Noronic*, *Huronic* and *Hamonic*, steamers of the Northwestern Navigation Company, which leave Detroit weekly on northern trips, afford the passengers opportunities to see some of the finest scenery in the Great Lakes region, the largest elevators in the world and the great

canal locks on the American and Canadian sides at the Soo, as well as the beautiful Kakabeka Falls and the delightful scenes about Port Arthur, Fort William and Duluth. The steamers leave on the northern trips, Mondays, Wednesdays and Saturdays, the first stops being Sarnia and the Soo.

One entire day of the trip is devoted to a 40-mile jaunt inland through forests of pine, to the falls at Kakabeka, which rival Niagara. A special train carries the excursionists from Fort William to the falls, the amber waters of the Kakabeka River breaking far below on black shale.

Returning, the excursionists are taken to Port Arthur. Dinner is served at Prince Arthur hotel, a beautiful structure recently erected. After dinner the evening may be spent in the city or on the steamer.

Duluth is reached the following noon. Cars and tally-hos are at the wharf, and Duluth, a city of 90,000 perched on a hill, is seen from the vehicles which wind their way through the upper reaches until they are 600 feet above the main street of the thriving lake port.

Throughout the cruise the Northern Navigation Company provides amusement and entertainment for its passengers. The observation arrangements on the three steamers are without parallel on any of the lake boats. The observation parlors are on the upper deck, where one has the advantage of the steamer's great height.

The advantages for sight-seeing which these lake steamers give, therefore, have earned for their cruise the title, "the most beautiful inland sea voyage of them all."

TRANSPORTATION TO THE MEETING

Rates for Round Trips to Detroit—Announcement of the Transportation Committee

The Committee on Transportation and Place of Session urges Fellows to consult the local ticket agent at their home town for complete information regarding rates, time limits, extensions and stop-over privileges available in making the trip to Detroit for the annual session of the Association. There is on file in every ticket office the traffic schedule which officially informs local agents of the rates from that point. Fellows should not leave the determination of the route desired until just before they are ready to start on the trip. Local ticket agents may have to obtain special tickets for these excursions from central points, and this must be arranged in time so that the tickets may be purchased when the journey is begun. These agents will also be able to give information concerning circuit routes which will permit making whatever side trips may be desired in connection with the journey to or from Detroit.

In order to give a general idea of the rates available, the following round trip railroad fares and one-way Pullman lower berth charges to Detroit are given. In some instances, these fares are approximated:

	R. R. Fare	Pullman Fare		R. R. Fare	Pullman Fare
Baltimore	$23.80	$3.50	Milwaukee	$15.08	$3.00
Boston	28.95	4.00	Minneapolis	30.00	3.50
Buffalo	10.05	3.00	New Orleans	36.45	7.00
Chicago	11.00	2.00	New York	25.70	3.50
Cincinnati	10.50	2.00	Omaha	35.10	4.50
Cleveland	6.70	2.00	Philadelphia	23.80	3.50
Columbus	7.30	2.00	Pittsburgh	11.90	2.00
Dallas	50.30	7.00	Portland	83.50	15.00
Denver	52.50	7.50	San Francisco	83.50	15.00
Indianapolis	10.70	2.00	St. Louis	18.50	2.50
Jacksonville	36.10	6.50	St. Paul	30.00	3.50
Kansas City	29.00	4.00	Seattle	83.50	15.00
Louisville	14.65	3.50	Toronto	8.75	1.50
Los Angeles	83.50	15.00	Washington	23.80	3.50

These rates are in accordance with those which have been announced by the various passenger associations listed below:

Central Passenger Association.—Two cents per mile in each direction, but in no case more than summer tourist fares. Signature form of tickets will be sold June 10, 11 and 12, final return limit to reach the original starting point not later than midnight, June 20. A joint tariff authorizing fares for the annual session of the Association from points in the Central Passenger Association territory is now being compiled.

Trunk Line Association.—Two cents per mile in each direction, going and returning via same route only; tickets to be sold and good, going, June 10-12, and returning, to reach the original starting point not later than June 20.

Southwestern Passenger Association.—Two cents per mile in each direction for round trip. These tickets will be on sale from June 1 to September 30, with return limit to October 31. The exact fares can be obtained on application to the local agent.

New England Passenger Association.—Two cents per mile in each direction, short line mileage, going and returning via the same route only and over which one-way tickets are regularly sold—one and one-half westbound differential to apply. Tickets to be sold and good going June 10-12 and returning to reach original starting point not later than midnight of June 20.

Western Passenger Association.—The lines members of the Western Passenger Association have individually announced that for the annual session of the American Medical Association, they will institute and participate in the following fares and arrangements: Double the current one-way I. C. C., basing fares from a selected number of points in Western Passenger Association territory to Chicago, Peoria or St. Louis, not to exceed authorized summer tourist selling fares to those points, added to the fares tendered therefrom, such fares to be announced later. From points in Illinois, also from Bellevue, Burlington, Clinton, Davenport, Dubuque and Keokuk, Iowa, and from Hannibal, Mo., and St. Louis, tickets to be sold June 10-12, inclusive, with final return limit to reach original starting point not later than midnight of June 20. From other points in Western Passenger Association territory, tickets to be sold June 9-11, inclusive, with final return limit to reach the original starting point not later than midnight of June 21, 1916. Tickets to be limited for going passage commencing date of sale and for a continuous passage in each direction. Tickets are to be validated by the agent at terminal line at Detroit.

Eastern Canadian Passenger Association.—The rate quoted is one-way ordinary first-class fare and one-third, plus 25 cents, for the round trip. Tickets may also be issued at Montreal to Detroit and return, rail to Detroit and return to Toronto or Kingston, thence steamer to Montreal, at a through fare of $22.50.

"American Medical Special"

This train will run over the Michigan Central, "the Niagara Falls Route," and is scheduled to leave Chicago at 11:55 p. m., Monday, June 12, which is considered the most convenient time for those going from Chicago, and provides for a comfortable connection for those coming from points west of Chicago. The train will be made up solid of Pullman sleeping cars, including drawing room and compartment cars. It is planned to have the train arrive in Detroit at the new passenger terminal of the Michigan Central at 7:30 (Central Time) the following morning.

In addition to this special, the Michigan Central runs the following fast trains which carry sleeping cars, parlor cars, dining cars and day coaches. From Chicago, the fare will be $11, round trip, good on all trains. Tickets will be on sale June 10, 11 and 12, returning June 20. From points west of Chicago, tickets will be on sale, commencing June 1, limited to thirty days for return, at proportionate low round-trip fares:

*Leave Chicago 9:05 a. m.	Arrive Detroit 3:35 p. m.
Leave Chicago 10:30 a. m.	Arrive Detroit 5:55 p. m.
*Leave Chicago 12:30 p. m.	Arrive Detroit 6:55 p. m.
Leave Chicago 3:00 p. m.	Arrive Detroit 10:35 p. m.
*Leave Chicago 5:40 p. m.	Arrive Detroit 12:01 a. m.
*Leave Chicago 6:10 p. m.	Arrive Detroit 12:45 a. m.
Leave Chicago 10:00 p. m.	Arrive Detroit 6:45 a. m.
Leave Chicago 12:05 a. m.	Arrive Detroit 8:00 a. m.
Leave Chicago 3:00 a. m.	Arrive Detroit 10:30 a. m.

* An extra fare of 25 cents is charged Chicago to Detroit on this train.

The Pullman fares between Chicago and Detroit, one way, are as follows: Upper berth, $1.60; lower berth, $2; compartment, $6; drawing room, $7, and seat in parlor car, $1.

New York and Boston Special

The Medical Society of the State of New York has arranged with the New York Central Railroad for a special train which is scheduled to leave both New York and Boston, Sunday, June 11, as noted below.

Lv. New York (Grand Cent. Ter.) Sunday, June 11..		5:00 p. m. (E. T.)
Lv. 125th St. Station		5:11 p. m. (E. T.)
Lv. Yonkers	N. Y. C. R. R.	5:28 p. m. (E. T.)
Lv. Harmon	N. Y. C. R. R.	5:57 p. m. (E. T.)
Lv. Boston	B. & A. R. R.	2:00 p. m. (E. T.)
Lv. Worcester	B. & A. R. R.	3:12 p. m. (E. T.)
Lv. Springfield	B. & A. R. R.	4:37 p. m. (E. T.)
Lv. Pittsfield	B. & A. R. R.	6:27 p. m. (E. T.)
Lv. Albany	N. Y. C. R. R.	8:15 p. m. (E. T.)
Lv. Schenectady	N. Y. C. R. R.	8:47 p. m. (E. T.)
Lv. Utica	N. Y. C. R. R.	10:23 p. m. (E. T.)
Lv. Syracuse	N. Y. C. R. R.	11:40 p. m. (E. T.)
Lv. Rochester	N. Y. C. R. R., Monday, June 12,	1:20 a. m. (E. T.)
Lv. Buffalo	M. C. R. R.	3:10 a. m. (E. T.)
Ar. Detroit	M. C. R. R.	7:10 a. m. (C. T.)

This special train will be run from the Grand Central Terminal, New York, and cars from Boston will be attached to the train at Albany. The equipment will be of modern all-steel Pullman open section drawing room and compartment observation car, dining car and buffet library smoking or club car.

Special rates over the New York Central Lines from the principal stations are as follows:

From	Railroad Fare	Pullman Fare Lower	Upper	Compt.	Draw. Rm.
New York*	$26.70	$3.50	$2.80	$10.00	$13.00
Albany	21.30	3.00	2.40	8.50	11.00
Schenectady	20.60	3.00	2.40	8.50	11.00
Utica	17.50	2.75	2.20	8.00	10.00
Syracuse	15.40	2.50	2.00	7.00	9.00
Rochester	12.20	2.00	1.60	6.00	7.00
Buffalo	10.05	1.50	1.25	5.00	6.00
Boston	28.95	4.00	3.20	11.50	14.00
Worcester	27.40	4.00	3.20	11.50	14.00
Springfield	25.45	3.50	2.80	10.00	13.00
Pittsfield	23.30	3.50	2.80	10.00	13.00

* Railroad fares quoted from New York include excess fare of $1 applying account of fast time of the special train. Proportionate fares from other points.

A competent representative of the passenger department of the New York Central Lines will accompany the party to look after details and the comfort of the passengers, and will reserve Pullman accommodations for the return trip in special cars or otherwise as may be desired.

Those who find it inconvenient to use this special train may obtain tickets at the rates quoted above, which can be purchased June 10 to 12 inclusive, and will be good on all trains on the payment of the excess fares applying on the fast trains. The tickets will be good returning to reach the original starting point not later than June 20, and stop-over may be made on the return at Niagara Falls and other principal points within the final limit.

The Michigan Central Railroad schedule from Buffalo to Detroit is as follows:

Lv. Buffalo 7:55 a. m. (E. T.); 2:00 p. m. (E. T.) 8:30 p. m. (E. T.) 11:55 p. m. (E. T.).

Lv. Niagara Falls 8:37 a. m. (E. T.), 2:43 p. m. (E. T.); 8:05 p. m. (E. T.).

Ar. Detroit 1:25 p. m. (C. T.) 8:45 p. m. (C. T.); 12:45 a. m. (C. T.); 4:35* a. m. (C. T.).

* Passengers may remain in sleepers until 7 a. m.

Physicians' Special Lake Cruise

Provided there is a minimum party of 250 passengers, arrangements will be made to have the steamship *South American* leave Chicago Saturday, June 10, to arrive in Detroit, Monday, June 12. The schedule for the trip will be arranged so as to permit a stop of several hours at Mackinac Island for sightseeing, and the steamer will lie at the dock in Detroit until the end of the annual session. During this time the guests will be served with breakfast on the boat and will have the use of staterooms and berths. The boat which is to be used is one of the largest passenger boats on the Great Lakes, and has an accommodation for 538 passengers, all outside rooms. Special arrangements may be made for banquets and balls any evening while the steamer is lying at Detroit. The rates for this cruise will be $30.

J. RAWSON PENNINGTON, Chairman,
Committee on Transportation and Place of Session.

BY AUTOMOBILE TO DETROIT

It is expected that several hundred Fellows of the American Medical Association will travel by automobile to the annual session at Detroit. In order to aid those who desire to go by automobile, the Committee on Arrangements has worked out a series of routes which are most suitable for motorists.

The accompanying map, which is furnished by the courtesy of the Hupp Motor Car Corporation of Detroit, gives a general idea of the routes to be taken from Eastern and Central states. The lack of space prevents detailed description of these routes. The diagram is intended to show the general trend of travel from the various sections to Detroit.

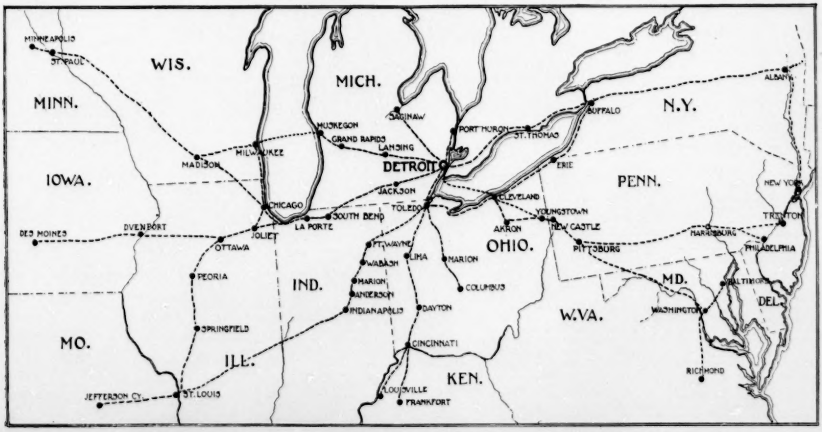


Fig. 12.—Auto Routes to Detroit.

The Hupp Motor Car Corporation has also offered, through the Committee on Arrangements, to supply any detailed information which the individual Fellows of the Association may desire. On account of road conditions it is impossible to give the exact information at this time. However, physicians should write to the Committee on Arrangements, or direct to the Hupp Motor Car Corporation, previous to starting, and such information will be secured. Information will also be available as to routes for short trips around Detroit.

Tourists from Western sections can generally secure best travel by going, first, to the Lincoln Highway. This highway passes through the section just south of Chicago, and the trip to Detroit may be made either by continuing on the highway through Aurora, Joliet, Valparaiso, Elkhart and Fort Wayne, and then leaving the highway northward to Toledo or Detroit, or a shorter route may be taken from South Bend straight into Kalamazoo and Jackson.

Motorists from the St. Louis section can get the best route by way of either Springfield, Peoria and the Lincoln Highway, or by way of Indianapolis through Anderson, Wabash and Fort Wayne. From the Northwest the best route is from Minneapolis down to Madison and on to Chicago, or, leaving Madison, to Milwaukee and taking the Pere Marquette boats to Muskegon and then by way of Grand Rapids and Lansing. Eastern motorists may take the northern route from New York to Albany, thence over to Utica, Syracuse, Rochester and Buffalo, and then by boat to Detroit, or through Canada, by way of St. Thomas to Detroit. The Ontario government has just passed a law permitting the entrance, of a duration of thirty days, for cars from other states. This is a repeal of last year's law which allowed American motorists to take out Canadian licenses. Motorists from the East and South may also travel by way of the Lincoln Highway over to Canton, from which place a cut can be made over to Cleveland, and from there by boat to Detroit or on to Toledo and Detroit; or the highway may be continued to Lima, and thence north to Toledo.

SHIPMENT OF AUTOMOBILES BY STEAMERS

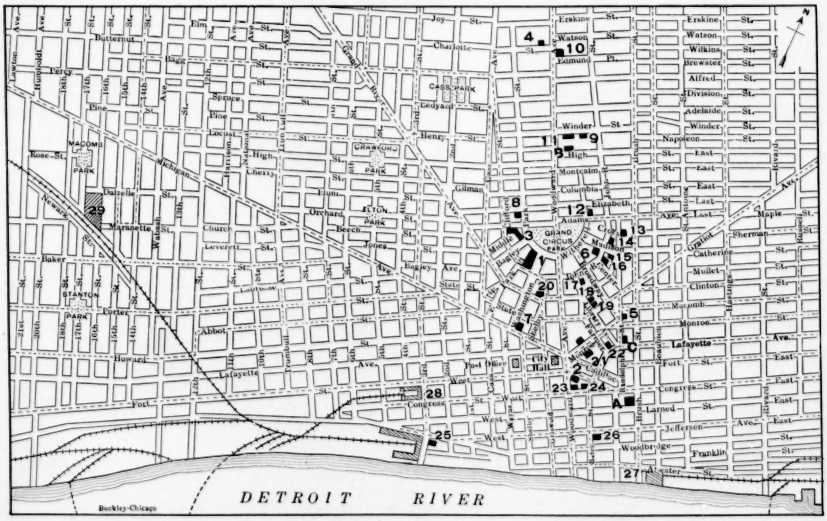
The rates on automobiles by steamers vary according to the length of the wheel base and the equipment of the car. Between Detroit and Cleveland prices vary from $6 to $13, and between Detroit and Buffalo from $7 to $18.

GARAGE ACCOMMODATIONS

Those who intend to motor to Detroit are requested to reserve garage space at once. In order to assist physicians to find the accommodations they need, the local Committee on Arrangements has appointed a subcommittee on automobiles, and suggests that physicians who desire to make reservations of garage space, or who need advice concerning other matters of interest in connection with going to Detroit by automobile, address the chairman of the subcommittee at 33 High Street, East, Detroit. It is desirable to arrange for these reservations at as early a date as possible. The rates for service are stated to be:

Storage, 24 hours	$0.75 to $1.50
Washing and polishing cars	1.50 to 2.50
Labor on repairs, etc	.75 per hour

DETROIT INFORMATION



MAP OF DETROIT

A. Armory, Detroit National Guard, N. E. corner Brush and Larned Sts.
B. Wayne County Medical Society Building, 33 High Street, East.
C. Lyceum Theater, 180 Randolph Street.
1. Statler Hotel, Washington Blvd., Bagley Ave. and Grand Circus Park.
2. Pontchartrain Hotel, S. E. corner Cadillac Square and Woodward Ave.
3. Tuller Hotel, Park Ave. and Grand Circus Park.
4. Addison Hotel, N. W. corner Charlotte and Woodward Aves.
5. Ste. Claire Hotel, N. E. corner Monroe and Randolph Sts.
6. Plaza Hotel, Madison Ave. and John R. St.
7. Cadillac Hotel, Michigan and Washington Aves.
8. Charlevoix Hotel, Park Ave. and Elizabeth St.
9. Eldorado Hotel, Winder St., East of Woodward.
10. First Presbyterian Church, Woodward Ave. and Edmond Pl.
11. Baptist Church, Institute Building, Winder St., East of Woodward.
12. Y. M. C. A. Building, N. E. corner Adams Ave. and Witherell St.
13. D. A. C. Garage, Randolph St. and Madison Ave.
14. Detroit Athletic Club, John R. St. and Madison Ave.
15. Madison-Lenox Hotel, Madison Ave.
16. Henry Clay Hotel, S. E. corner John R. and Center Sts.
17. St. Charles Hotel, Farmer St.
18. Oriental Hotel, Library Ave.
19. Library Park Hotel, Library Ave.
20. Griswold Hotel, N. E. corner Grand River Ave. and Griswold St.
21. Berghoff Hotel, Monroe Ave.
22. Burns Hotel, North Side Cadillac Square, corner Bates.
23. Metropole Hotel, Woodward Ave.
24. Normandie Hotel, Congress St., near Woodward Ave.
25. Wayne Hotel, S. E. corner Jefferson Ave., West and Third Sts.
26. Interurban Station, S. E. corner Jefferson Ave. and Bates St.
27. Grand Trunk Station, Foot of Brush St.
28. Union Station, S. W. corner Fort and Third Sts.
29. Michigan Central R. R. Depot, 15th St., near Michigan Ave.

THE SCIENTIFIC EXHIBIT

All signs point to a successful Scientific Exhibit. Much credit is due to the local committee. Extremely gratifying is it that the Far West, the South and the East will be creditably represented. This widespread geographic representation from year to year indicates that scientific workers all over the country are coming to recognize the Scientific Exhibit as an excellent arena in which to show the fruits of scientific investigation.

Brief reference should be made at this time to the classification of exhibits already published (THE JOURNAL, April 1, 1916, p. 1041), which will constitute the basis of awards made. The main divisions are as follows:

I. Institution Exhibits.
II. Research Exhibits.
III. Exhibits Relating to Laboratory Methods of Diagnosis.
IV. Practitioners' Exhibits.
V. Medical Society Exhibits.
VI. Public Health Exhibits.

Research exhibits will probably constitute the dominant feature. This has been the natural and inevitable trend in the evolution of the exhibit. This does not mean that exhibits illustrative of the fundamentals in anatomy, physiology and pathology are not acceptable, or that exhibits dealing with the public health and clinical problems are not desired. All are most necessary to make this important branch of Association work of the highest teaching value to the largest number. In the field of research it has been thought advisable to emphasize two features:

1. Exhibits of work on blastophthoria—experimental work showing effects of alcohol, lead, Roentgen rays, etc., on the germ cells.

2. Exhibits showing the application of biologic methods to clinical medicine, including sensitization, anaphylaxis, biologic serum tests, vaccines, etc. Those who contemplate showing anything in illumination of these topics should communicate with Dr. A. S. Warthin, University of Michigan Medical School, Ann Arbor, Mich.

The Roentgen-ray exhibits will differ in the manner of presentation from those previously given. Instead of the conventional illuminated boxes, those making Roentgen-ray exhibits will be required to reduce their exhibits to lantern slide form. It is proposed to have demonstration of these by subjects and at hours scheduled on the official program. An excellent dark room is available for this purpose. The range of subjects to be presented is such as will appeal to a large number. Those who contemplate participating in this phase should communicate with Dr. P. M. Hickey, 32 Adams Avenue, West, Detroit.

Under medical society exhibits it is urged that a study be made of the doctor's problems, so far as his own comfort and welfare are concerned. Abuses exist in the profession and among the laity toward the profession, which organized effort should seek to correct. A scientific presentation of the facts will aid in the solution of these problems. Let there be made a study of these conditions which should be set forth in statistics, charts, diagrams, etc. One very comprehensive exhibit of this sort is assured for the coming meeting.

Exhibits by general practitioners, as indicated by the foregoing classification, are urged by the committee. The practitioner without hospital or college connection should not minimize his importance or responsibility as a contributor to the Scientific Exhibit. Some of the very best contributions we have received have been from this source. It is fully expected that those entering this classification will display an originality which will excite comment and admiration.

Exhibitors should ship materials in ample time to arrive Friday before the meeting. It is preferable that exhibits be installed Saturday, and certainly not later than Monday. Let every exhibit be in place early Tuesday morning. Shipments should be made to the A. M. A. Scientific Exhibit, Detroit Armory, Detroit, Mich., care of Dr. J. Walter Vaughan. Meantime, general inquiries concerning the Scientific Exhibit should be sent to the director, Frank B. Wynn, 421 Hume-Mansur Building, Indianapolis.

FRANK B. WYNN, Director,

LOUIS B. WILSON, H. GIDEON WELLS,
A. S. WARTHIN, PLYNN F. MORSE,
Committee.

HOTEL RESERVATIONS

The Committee on Arrangements requests that hotel reservations be made through its subcommittee on hotels, rather than by communicating directly with the hotels. When this subcommittee receives a request for a reservation, it will take up the matter with the management of one of the hotels, and see to it that the hotel advises the applicant of the reservation made. In writing to the committee, please name a first and second choice of hotel and state the number of rooms desired for the accommodation of your party. Also, name the rate you are willing to pay. Those who desire rooms with bath should state whether a tub or a shower is preferred. The local Committee on Arrangements should be notified promptly in case a reservation which has been made is not to be used. This will permit the committee to have the space assigned to others. The Committee on Arrangements has been advised that in certain instances those who have communicated with the hotels directly have not received prompt attention. Consequently, as urged above, the committee should be addressed in order that provision may be made for the comfort and convenience of those who plan to attend the meeting. The chairman of the subcommittee on hotels is Dr. Rolland Parmeter. Communications should be addressed to him at the office of the Committee on Arrangements, 33 East High Street, Detroit.

RATES AT DETROIT HOTELS

Hotel	No. of Rooms	Rate per Day Single	Rate per Day Double
Addison	50	$2.00	$2.50
Berghoff	72	1.50	2.00
Brunswick	75	1.50	2.75
Burns	100	1.50	3.50
Cadillac	250	2.50	4.00
Carlsbad	82	1.50	2.50
Charles	85	1.50	2.50
Charlevoix	200	1.50	3.00
Clayton	70	1.50	3.00
Eldorado	100	2.00	3.00
Grand Union	48	1.50	2.50
Griswold	175	2.00-$2.50	3.00-$4.00
Henry Clay	240	1.50	2.00
Hoffman	200	1.25	2.50
Imperial	80	1.50	2.00
Lenox	210	2.00	3.00
Library Park	75	2.00	3.00
Madison	200	2.00	2.50
Marietta	25	1.50	2.00
Metropole (Stag)	70	1.50- 2.50	2.50- 3.00
Morgan	100	1.50	2.50
Normandie	105	1.50	3.00
Northern	20	1.00	....
Norton (Stag)	68	1.50	3.00
Oriental (Stag)	80	1.25	2.50
Oxford	72	2.50	3.00
Pontchartrain	425	2.50	4.00
Pinehurst	20	1.50	2.00
Rexmere	37	2.00	3.00
Statler	1,000	1.50- 5.00	3.00- 7.00
Ste. Claire*	100	3.50	7.00
Stevenson	150	1.25	3.00
Tuller	600	1.50	2.50
Wayne	175	2.00	3.00

* American plan.

MEETING PLACES AND HOTEL HEADQUARTERS

Letters and numerals refer to the map, p. 1510. In certain instances, changes have been made from the hotel headquarters announced in previous issues of THE JOURNAL. This list has been compiled from the latest information furnished by the Local Committee on Arrangements.

HOUSE OF DELEGATES: Wayne County Medical Society Building (B), 33 East High Street.

GENERAL MEETING: Lyceum Theater (C), 180 Randolph Street. (The public health meeting to be held Friday, June 16, will also be held in this theater.)

SCIENTIFIC EXHIBIT, REGISTRATION BUREAU, COMMERCIAL EXHIBIT, INFORMATION BUREAU, AND BRANCH POSTOFFICE: Detroit National Guard Armory (A), Corner Brush and Larned Streets.

Sections, Hotel Headquarters and Meeting Places

PRACTICE OF MEDICINE: Pontchartrain Hotel (2); First Presbyterian Church (10).

SURGERY, GENERAL AND ABDOMINAL: Tuller Hotel (3); Institute Building, Baptist Church (11).

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY: Statler Hotel (1); Institute Building, Baptist Church (11).

OPHTHALMOLOGY: Statler Hotel (1); Ball Room, Statler (1).

LARYNGOLOGY, OTOLOGY AND RHINOLOGY: Statler (1); Convention Hall, Statler (1).

DISEASES OF CHILDREN: Addison Hotel (4); First Presbyterian Church (10).

PHARMACOLOGY AND THERAPEUTICS: Tuller Hotel (3); Roof Garden, Tuller (3).

PATHOLOGY AND PHYSIOLOGY: Tuller Hotel (3); Convention Hall, Tuller (3).

STOMATOLOGY: Ste. Clair Hotel (5); Convention Hall Floor, Pontchartrain Hotel (2).

NERVOUS AND MENTAL DISEASES: Plaza Hotel (6); Y. M. C. A. (12).

DERMATOLOGY: Pontchartrain Hotel (2); Convention Hall Floor, Pontchartrain Hotel (2).

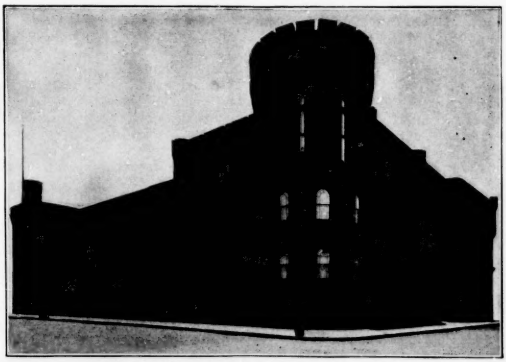


Fig. 13.—The Armory.

PREVENTIVE MEDICINE AND PUBLIC HEALTH: Cadillac Hotel (7); Second Floor Cadillac Hotel (7).

GENITO-URINARY DISEASES: Pontchartrain Hotel (2); Convention Hall, Pontchartrain Hotel (2).

HOSPITALS: Charlevoix Hotel (8); Top Floor, Tuller Hotel (3).

ORTHOPEDIC SURGERY: Charlevoix Hotel (8); Institute Building, Baptist Church (11).

REGISTRATION

The Importance of Registering Early—A Few Suggestions Which Will Facilitate Registration

The Bureau of Registration will be located in the Detroit National Guard Armory, Corner of Brush and Larned Streets. A committee of local physicians will assist those desiring to register. A branch postoffice will be opened, and a bureau of information established in connection with the Registration Bureau.

Every one who registers will be required to fill out completely, except the blank space for the number, the spaces on both parts of the double registration cards, which will be found on the tables in front of the Registration Bureau. These entries should be written very plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*.

1. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out registration card, together with their pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a copy of the official program and other printed matter of interest to those attending the annual session.

2. Those Fellows who have forgotten their pocket cards should present the filled in registration card at the window marked "Paid—No Card." The work of registration at this window will be conducted as rapidly as possible; but the necessity of finding the Fellow's name on the Fellowship roster will occupy time and will occasion inconvenience to those who neglect to bring their pocket cards with them.

3. The Fellow whose 1916 dues are unpaid should present his filled in registration card with the amount of his Fellowship dues ($5) at one of the windows marked "Cash." Here, too, there will be occasioned some delay; but the work of registering will be conducted as promptly as possible.

4. Subscribers and others desiring to qualify as Fellows should present a filled in registration card, together with a formal application for Fellowship at the window marked "New Fellows." These applications for Fellowship can be obtained at the Registration Bureau or from the members of the Committee on Registration. In order to qualify as a Fellow, the applicant must be officially reported as a member of the constituent association of the state in which he resides, and in addition to filing this formal application, he must pay his annual Fellowship dues for the current year; if already a subscriber to THE JOURNAL, with his subscription paid for a term to or beyond Jan. 1, 1917, no additional payment is necessary. If subscription is not paid in full for the current year, the payment of a sum to extend it to Jan. 1, 1917, is required.

The registration of new Fellows will be greatly facilitated if they will provide themselves with certificates of membership issued by the secretary of their state association, certifying to their membership in the state and county branches of the organization.

It will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than June 1. Any applications received later than June 1 will be given prompt attention, but the Fellowship certificate and pocket card may not reach the applicant in time so that he can use this card in registering at the Detroit session, and he may be required to make a second payment of his Fellowship dues, which must be held until the records at headquarters can be consulted after the close of the session, when any excess payment will be adjusted.

If, however, a member of the Association neglects to qualify as a Fellow before reaching Detroit, he may be entered as a Fellow at the meeting, as suggested above.

SOCIAL ENTERTAINMENTS

(The official Fellow's badge, or one of those provided for ladies and guests, will be required for admission to entertainments, and to other places to which entrance is granted to those in attendance on the annual session.)

Arrangements have been completed for a golf tournament open to Fellows of the Association who qualify as members of the American Medical Golfing Association. Monday, June 12, is the day set for this contest, which will be played on the Country Club course. Those desiring further information or wishing to be entered in this contest should address Dr. H. R. Varney, Kresge Building, Detroit, or Dr. Will Walter, 122 Michigan Avenue, Chicago.

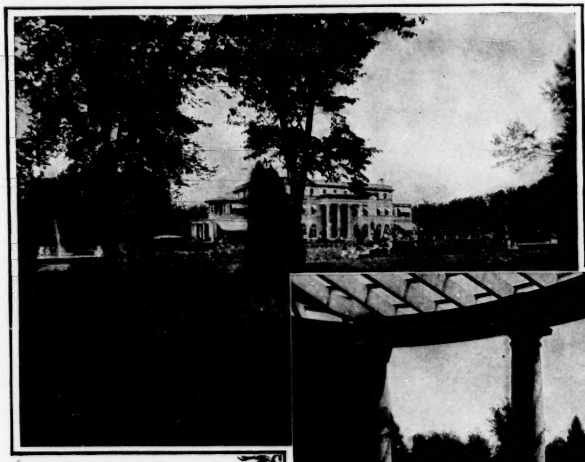


Fig. 14.—Above: The Residence at Clairview, Grosse Pointe Shores. Below: The Grounds at Clairview.

Monday evening: Open house at the Wayne County Medical Society Building.

Tuesday afternoon: Receptions and afternoon teas will be given to the visiting ladies at the Country Club and the Detroit Boat Club from 3 to 5 o'clock.

Tuesday evining: Alumni and section dinners and smokers. The Blackwell Society will entertain the visiting women physicians this evening.

Wednesday afternoon: Reception and afternoon tea at the Detroit Boat Club on Belle Isle and the Country Club from 3 to 5 o'clock.

Wednesday evening: President's Reception at the Hotel Statler, followed by dancing.

Thursday afternoon: The Fellows and ladies of the American Medical Association will be tendered a garden party by Dr. and Mrs. H. N. Torrey on the grounds of their home "Clairview" at Grosse Pointe.

Thursday evening: Reception and dance at the Palais de Danse, 8:30 to 12.

Friday: Trips will be made to Ann Arbor, Mount Clemens, and other places.

The Regents and the Faculty of the Medical School invite the Fellows of the American Medical Association and their ladies to visit the University of Michigan, Ann Arbor, Friday, June 16, and have appointed this day for a reunion of all former members of the medical school. The following provisional program has been arranged:

Members of the medical faculty will announce hours when they can be seen by their friends. From 10:30 to 12 there will be clinics and demonstrations at the hospitals. At 1 o'clock a luncheon will be provided by the regents. In the afternoon demonstrations will be given in the medical laboratories.

A committee of the wives of the members of the medical faculty will meet the ladies and conduct them to places of especial interest. All the museums and collections will be open. Automobile drives will be arranged for those who wish to visit the city.

At 3 o'clock there will be an organ recital in Hill Auditorium. Class meetings will be held at 4. From 4:30 to 6:30, Dr. and Mrs. Vaughan will give a reception at their home.

Friday afternoon: A boat ride on the steamer *St. Claire* to the Flats, returning about 6 o'clock.

Friday evening: Moonlight dancing party on the steamer *St. Claire* from 8:30 to midnight.

PUBLIC HEALTH MEETING

The success of Commemoration Day at San Francisco prompted the Council on Health and Public Instruction to arrange for a public meeting following the Detroit session. This will be held at the Lyceum Theater, 180 Randolph Street, on Friday afternoon, June 16. The Michigan State Board of Health and the Detroit Department of Health are cooperating. Preceding the meeting, there will be a public health parade under the auspices of the State Board of Health. Detailed announcements will be made later.

POSTOFFICE

An Association Postoffice will be maintained at the Registration Bureau in the National Guard Armory, corner of Brush and Larned Streets. Guests are requested to order mail addressed to them "Care American Medical Association, National Guard Armory, Detroit," or to their hotels, as preferred.

MEETINGS OF NONAFFILIATED ORGANIZATIONS

The following medical societies are listed to hold their annual conventions and congresses in Detroit preceding the Scientific Assembly of the American Medical Association: American Academy of Medicine, June 9-12; American Association of Anesthetists, June 12; American Bacteriologic Society, June 12; American Therapeutic Society, June 9-10, and the Alpha Omega Alpha Society, June 12; and following the Scientific Assembly, the National Association for the Study of Epilepsy, June 16.

AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS

The organization of the American Association of Industrial Physicians and Surgeons will be completed, Monday, June 12, 1916, at Detroit. The headquarters will be at the Hotel Cadillac. Physicians engaged in industrial medicine or surgery are invited to be present. During the last two or three years, physicians engaged in industrial medicine have held meetings under the Section on Industrial Hygiene at the conventions of the American Public Health Association and the National Safety Council. At the meeting of the Section on Preventive Medicine of the American Medical Association, 1915, one session was devoted to such work. During the past year an organization committee has been formed and a charter has been secured under the laws of the state of Illinois. This charter will, however, be held open until after the Detroit session, and physicians who join the Association at that session will become charter members. Among the problems which will be discussed are:

1. Medical examination of employees; the results and the exact benefits of this procedure.
2. The surgeon as an aid in preventing accidents.
3. Emergency surgery and standardizing the proper treatment in certain types of emergency cases.
4. Standardizing the records used in this work.
5. Various forms of industrial insurance and the need of a federal health insurance law.

The officers of the organization committee are Dr. Chase Stubbs, of the National Malleable Casting Company, Chicago, chairman, and Dr. Harry E. Mock, of Sears, Roebuck & Co., Chicago, secretary.

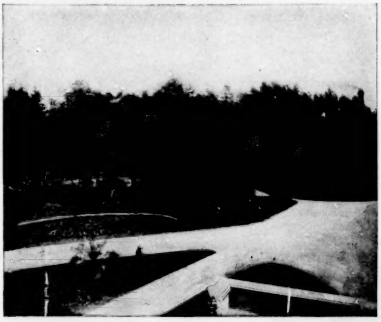


Fig. 15.—In Gladwin Park.

ALUMNI REUNIONS

The following meetings are contemplated:

Detroit College of Medicine and Surgery will hold an informal dinner and smoker at the Statler Hotel, Tuesday evening, June 13, at 8 p. m., Eastern standard time. Dr. Louis J. Hirschman will be the toastmaster. Tickets are $2 a plate and should be secured on or before Wednesday, June 7, by communicating with Dr. H. F. Dibble, 355 Woodward Avenue, or Dr. A. E. Catherwood, 1337 David Whitney Building, Detroit.

University of Michigan will hold an informal dinner and smoker at the Statler Hotel, Tuesday evening, June 13, at 8 p. m., Eastern standard time. Dr. Victor C. Vaughan will be the toastmaster. Tickets are $2 a plate, and should be secured on or before Wednesday, June 7. Reservations for this dinner should be made by addressing Dr. W. F. Seeley, Tenth Floor, Kresge Building, Detroit.

Harvard University will give an informal dinner and smoker at the University Club, Tuesday evening, June 13, at 8 p. m., Eastern standard time. Communications should be addressed to Dr. F. C. Kidner, 1337 David Whitney Building, Detroit.

Johns Hopkins University will hold an informal dinner and Smoker at the Detroit Athletic Club, Tuesday evening, June 13, at 8 p. m., Eastern standard time. Reservations may be made by communicating with Dr. H. W. Plaggemeyer, 1001 David Whitney Building, Detroit.

Details for other dinners and smokers cannot be given at this date. Alumni of Rush Medical College, Western Reserve School of Medicine, Jefferson Medical College, University of Pennsylvania, and George Washington University of Medicine are requested to communicate at once with the chairman of the Subcommittee on Alumni Reunions, Dr. George E. Fay, 33 High Street, East, Detroit, signifying their intention of participating, that local committees may be advised of the number for whom to prepare dinners. Any college desiring to have a dinner should advise at once.

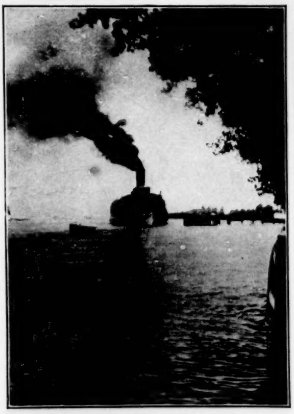


Fig. 16.—Landing at The Flats.

Section Dinners

Sections on Obstetrics, Gynecology and Abdominal Surgery, Diseases of Children, Nervous and Mental Diseases, and Practice of Medicine will have section dinners.

Fraternity Headquarters

The Alpha Epsilon Iota Fraternity will maintain headquarters in Suite 712, 38 Adams Avenue, West, Detroit, during the week of the session.

PUBLIC HEALTH SUNDAY IN DETROIT

In accordance with the plan followed for several years past, speakers on appropriate public health topics will be furnished for the churches, June 11, the Sunday preceding the session. This plan was followed last year in San Francisco, and in preceding years in Philadelphia, Minneapolis and St. Paul, with great success, practically all of the churches participating, including the Jewish, Roman Catholic and all of the Protestant denominations. The work of supplying speakers for the churches is under the direction of the Council on Health and Public Instruction. A local committee, of which Dr. Guy L. Kiefer is chairman, has been appointed to cooperate with the Council in this work. Arrangements for filling the Detroit pulpits are now going on, and it is anticipated that a large proportion of the churches will participate in the observance of Public Health Sunday. A large corps of experienced and capable speakers has been secured to fill appointments in any church desiring a public health talk. Further details will be given later as the plans develop.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF OPENING MEETING

LYCEUM THEATER

Tuesday, June 13, 10:30

Music.

Call to Order. President, ALBERT VANDER VEER, Albany, N. Y.

Invocation. BISHOP CHARLES D. WILLIAMS, Detroit.

Address of Welcome to Michigan. HON. WOODBRIDGE N. FERRIS, Governor of Michigan.

Address of Welcome to Detroit. HON. OSCAR B. MARX, Mayor of Detroit.

Address of Welcome by the Medical Profession. A. W. HORNBOGEN, President, Michigan State Medical Society.

Introduction and Installation of President-Elect RUPERT BLUE, Washington, D. C.

Address. RUPERT BLUE, President.

Music.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings — The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program nor is the list complete. The Official Program will be a pamphlet similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, also lists of committees, programs of the General Meeting and of the meetings of the House of Delegates, lists of entertainments, map of Detroit and other information. To prevent misunderstandings and to protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each member on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN FIRST PRESBYTERIAN CHURCH

OFFICERS OF SECTION

Chairman—ROGER S. MORRIS, Cincinnati.
Vice Chairman—JOHN A. LICHTY, Pittsburgh.
Secretary—JAMES S. MCLESTER, Birmingham, Ala.
Executive Committee—W. JARVIS BARLOW, Los Angeles; CHARLES LYMAN GREENE, St. Paul; THOMAS MCCRAE, Philadelphia.

Tuesday, June 13—2 p. m.

1. Epidemics of Grip—What we are Doing to Prevent Them.
JOSEPH A. CAPPS, Chicago.
2. Blood Transfusions, with Special Reference to Group Tests and Group Reactions.
WALTER V. BREM, Los Angeles.
Discussion to be opened by W. L. MOSS, Baltimore, and REUBEN OTTENBERG, New York.
3. Preliminary Observations on the Apparently Immunizing Behavior of the Mixed Serums of Immune and Hypersensitive Guinea-Pigs.
HENRY SEWALL, WILLIAM C. MITCHELL and CUTHBERT POWELL, Denver.
Discussion to be opened by F. G. NOVY, Ann Arbor, Mich., and F. P. GAY, Berkeley, Calif.
4. Comparative Results in Antirabic Treatment with the Pasteur Method and with Desiccated Virus.
DOWNEY L. HARRIS, St. Louis.
Discussion to be opened by WILLIAM H. PARK, New York, and M. J. COURET, New Orleans.

Wednesday, June 14—9 a. m.

5. A Consideration of Types of Uremia.
NELLIS B. FOSTER, New York.
Discussion to be opened by THEODORE C. JANEWAY, Baltimore, and WARFIELD T. LONGCOPE, New York.
6. The Value of Recent Laboratory Tests in the Diagnosis and Treatment of Nephritis, with Special Reference to the Chemical Examination of the Blood.
ARTHUR F. CHACE, New York.
Discussion to be opened by OTTO FOLIN, Boston.
7. A Comparative Study of Tests for Renal Function.
HERMAN O. MOSENTHAL, Baltimore.
Discussion to be opened by LEONARD G. ROWNTREE, Minneapolis, and HENRY A. CHRISTIAN, Boston.
8. Thoracic Disease—The Status of Surgical Therapy.
SAMUEL ROBINSON, Rochester, Minn.
Discussion to be opened by WILLY MEYER, New York, and F. T. LORD, Boston.
9. Localized Apical Bronchiectasis.
THOMAS MCCRAE and ELMER H. FUNK, Philadelphia.

Wednesday, June 14—2 p. m.

JOINT MEETING WITH THE SECTION ON SURGERY, GENERAL AND ABDOMINAL

SYMPOSIUM ON THE SPLEEN

10. The Immediate Effects of Splenectomy in Pernicious Anemia.
ROGER I. LEE, Boston.
11. The Late Effects of Splenectomy in Pernicious Anemia.
E. B. KRUMBHAAR, Philadelphia.
12. The Effects of Splenectomy in Diseases Other Than Pernicious Anemia.
JOSEPH L. MILLER, Chicago.
13. Splenectomy for Hemolytic Jaundice.
C. H. PECK, New York.
14. Indications for Splenectomy in Certain Chronic Blood Disorders and the Technic of the Operation.
DONALD C. BALFOUR, Rochester, Minn.
15. Pernicious Anemia Treated by Splenectomy and Often-Repeated Blood Transfusions.
R. D. MCCLURE, Baltimore.
Discussion on the Spleen to be opened by R. M. PEARCE, JR., Philadelphia; FRANK SMITHIES, Chicago; BETH VINCENT, Boston, and H. Z. GRIFFIN, Rochester, Minn.

Thursday, June 15—9 a. m.

Election of Officers

16. The Alternating Pulse—Its Clinical Significance.
JOHN E. GREIWE, Cincinnati.
Discussion to be opened by LAWRENCE C. GROSH, Toledo, and CHARLES F. HOOVER, Cleveland.
17. The Significance of Pulse Form.
ALBION W. HEWLETT, Ann Arbor.
18. The Relation of the Form of the Ventricular Complex in the Electro-Cardiogram to Functional Derangements of the Heart.
G. CANBY ROBINSON, St. Louis.
Discussion to be opened by FRANK N. WILSON, Ann Arbor, Mich.
19. Some Factors in the Production of Cardiac Dyspnea.
FRANCIS W. PEABODY, Boston.
Discussion to be opened by E. F. DU BOIS, New York.
20. Roentgenocardiograms: Polygraphic Strip Tracings of Heart Chambers by the Roentgen Ray.
AUGUSTUS W. CRANE, Kalamazoo, Mich.

Thursday, June 15—2 p. m.

21. Chronic Colitis of Uncertain Nature.
DAVID L. EDSALL, Boston.
22. Mechanism of Hunger Pain in Chronic Ulcer.
WALTER HAMBURGER, HARRY GINSBURG and ISADORE TUMPOWSKY, Chicago.
23. Further Experiences with Carbohydrate Restriction in the Treatment of Hyperchlorhydria and Ulcer.
WILLARD J. STONE, Toledo, Ohio.
Discussion to be opened by GEORGE DOCK, St. Louis, and CHARLES G. STOCKTON, Buffalo.
24. Syphilis as a Probable Factor in Obscure Stomach Disorders.
CABOT LULL, Birmingham, Ala.
Discussion to be opened by FRANK SMITHIES, Chicago, and A. W. HEWLETT, Ann Arbor, Mich.
25. Syphilis in the Southern Negro as Determined by the Wassermann and Luetin Reactions on a Thousand Negroes.
H. L. MCNEIL, Galveston, Texas.
Discussion to be opened by M. L. GRAVES, Galveston, Texas, and C. C. BASS, New Orleans.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN INSTITUTE BUILDING, BAPTIST CHURCH

OFFICERS OF SECTION

Chairman—E. WYLLYS ANDREWS, Chicago.
Vice Chairman—FRED T. MURPHY, St. Louis.
Secretary—E. S. JUDD, Rochester, Minn.
Executive Committee—A. F. JONAS, Omaha; CHARLES H. FRAZIER, Philadelphia; C. H. PECK, New York.

Tuesday, June 13—2 p. m.

1. Chairman's Address. E. WYLLYS ANDREWS, Chicago.
2. Suggestions as to the Method of Teaching Surgery (Lantern Demonstration). JOHN A. WYETH, New York.
   Discussion to be opened by A. D. BEVAN, Chicago.
3. Practical Results of Newer Methods in Surgery of the Stomach and Intestines. GEORGE W. CRILE, Cleveland.
   Discussion to be opened by J. M. T. FINNEY, Baltimore.
4. Nitrous Oxid-Oxygen Anesthesia in Major Surgery. A. BENNETT COOKE, Los Angeles.
   Discussion to be opened by W. I. TERRY, San Francisco.
5. Tuberculosis of the Cervical Lymphatics (Lantern Demonstration). CHARLES N. DOWD, New York.
   Discussion to be opened by JOHN F. GOLDEN, Chicago.
6. Incorrect Technic in the Application of Bismuth Paste in Chronic Suppurative Sinuses and Empyema. EMIL G. BECK, Chicago.
   Discussion to be opened by A. J. OCHSNER, Chicago.

Wednesday, June 14—9 a. m.

7. Acute Phlegmons of the Spinal Cord. JOHN B. MURPHY, Chicago.
   Discussion to be opened by JOSEPH COLLINS, New York.
8. Some Technical Features of Spinal Surgery, with Report of Results in 150 Spinal Operations (Lantern Demonstration). C. A. ELSBERG, New York.
   Discussion to be opened by HARVEY CUSHING, Boston.
9. Surgery of the Brachial Plexus. ARTHUR A. LAW, Minneapolis.
   Discussion to be opened by DEAN D. LEWIS, Chicago.
10. Free Transplantation of the Omentum Subcutaneously and Within the Abdomen. CARL B. DAVIS, Chicago.
    Discussion to be opened by JOHN STAIGE DAVIS, Baltimore.
11. Operative Treatment for Threatened Gangrene of the Foot, with Special Reference to Reversal of the Circulation (Lantern Demonstration). JOHN SHELTON HORSLEY, Richmond, Va.
    Discussion to be opened by DEWITT STETTEN, New York.
12. Stab Wounds of the Chest Involving the Diaphragm with Diaphragmatic Hernia. C. C. GREEN, Houston, Tex.
    Discussion to be opened by STUART MCGUIRE, Richmond, Va.

Wednesday, June 14—2 p. m.

JOINT MEETING WITH THE SECTION ON PRACTICE OF MEDICINE

SYMPOSIUM ON THE SPLEEN

13. The Immediate Effects of Splenectomy in Pernicious Anemia. ROGER I. LEE, Boston.
14. The Late Effects of Splenectomy in Pernicious Anemia. E. B. KRUMBHAAR, Philadelphia.
15. The Effects of Splenectomy in Diseases Other Than Pernicious Anemia. JOSEPH L. MILLER, Chicago.
16. Splenectomy for Hemolytic Jaundice. C. H. PECK, New York.
17. Indications for Splenectomy in Certain Chronic Blood Disorders and the Technic of the Operation. DONALD C. BALFOUR, Rochester, Minn.
18. Pernicious Anemia Treated by Splenectomy and Often-Repeated Blood Transfusions. R. D. MCCLURE, Baltimore.
    Discussion on the Spleen to be opened by R. M. PEARCE, JR., Philadelphia; FRANK SMITHIES, Chicago; BETH VINCENT, Boston, and H. Z. GIFFIN, Rochester, Minn.

Thursday, June 15—9 a. m.

Election of Officers

19. Removal of the Right Colon: Indications and Technic. C. H. MAYO, Rochester, Minn.
    Discussion to be opened by REA E. SMITH, Los Angeles.
20. Some Results of Colectomy and Exclusion of the Colon in Cases of Chronic Arthritis. J. T. BOTTOMLEY, Boston.
    Discussion to be opened by W. R. MACAUSLAND, Boston.
21. Perforating Ulcers of the Stomach and Duodenum. R. P. A. SULLIVAN, Brooklyn.
    Discussion to be opened by J. E. JENNINGS, Brooklyn.
22. Plastic and Reconstructive Surgery. JOHN STAIGE DAVIS, Baltimore.
    Discussion to be opened by J. S. STONE, Boston.
23. Sarcoma of Intra-Abdominal Testicle. W. W. GRANT, Denver.
    Discussion to be opened by W. B. COLEY, New York.
24. Chronic Appendicitis. F. G. CONNELL, Oshkosh, Wis.
    Discussion to be opened by H. A. BLACK, Pueblo, Colo.

Thursday, June 15—2 p. m.

25. Oration on Surgery: Surgical Aspects of the Industrial Accident Insurance. EMMET RIXFORD, San Francisco.
26. Complications and Sequelae of the Operation for Inguinal Hernia. LINCOLN DAVIS, Boston.
    Discussion to be opened by E. D. MARTIN, New Orleans.
27. The Surgical Problem of Symptomless Hematuria: Its Causes and Surgical Relief. R. L. PAYNE, JR., Norfolk, Va.
    Discussion to be opened by H. A. ROYSTER, Raleigh, N. C.
28. A Consideration of Fractures and Other Injuries of the Hip. A. R. MACAUSLAND, Boston.
    Discussion to be opened by C. E. THOMPSON, Scranton, Pa.
29. Nail Extension in Fractures of the Lower Extremity. J. C. A. GERSTER, New York.
    Discussion to be opened by R. H. SAYRE, New York.
30. The Use of Nails and Screws Through the Cartilage Surface in Fractures Into the Joint. A. T. MANN, Minneapolis.
    Discussion to be opened by F. H. ALBEE, New York.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS IN INSTITUTE BUILDING, BAPTIST CHURCH

OFFICERS OF SECTION

Chairman—EDWARD M. REYNOLDS, Boston.
Vice Chairman—ALFRED B. SPALDING, San Francisco.
Secretary—BROOKE M. ANSPACH, Philadelphia.
Executive Committee—F. F. SIMPSON, Pittsburgh; E. GUSTAV ZINKE, Cincinnati; THOMAS S. CULLEN, Baltimore.

Tuesday, June 13—2 p. m.

1. Chairman's Address: The Uterine Secretions, Spermatozoa and Ovaries in Fertility and Sterility: From Microscopic Studies. EDWARD M. REYNOLDS, Boston.
2. The Corpus Luteum—Its Life Cycle and Its Rôle in Menstrual Disorders. EMIL NOVAK, Baltimore.
3. The Rôle of the Anteposed Uterus in the Causation of Backache and Pelvic Symptoms. HENRY T. HUTCHINS, Boston.
4. The Value of the Wassermann Test in Pregnancy. FREDERICK H. FALLS, Chicago.
5. Adenomyoma of the Rectovaginal Septum. THOMAS S. CULLEN, Baltimore.

Wednesday, June 14—9 a. m.

6. Colonic Infections: Some Seldom Described Nonspecific Types. J. M. LYNCH and W. L. MCFARLAND, New York.
7. Congenital Inflammation, Deformation and Defunctionalization of the Caudad Ileum and Colon: Their Relation to the Neuroses. JOSEPH RILUS EASTMAN, Indianapolis.
8. Anterior Parietal Implantation of the Colon for Ptosis. CHARLES A. L. REED, Cincinnati

9. The Prevention of Obstruction of the Passage of Gas Following Operations on the Colon. ALBERT J. OCHSNER, Chicago.
10. Radical Operations for the Cure of Cancer of the Large Intestine. WILLIAM J. MAYO, Rochester, Minn.

Wednesday, June 14—2 p. m.

11. Intestinal Obstruction: Further Experimental Studies. JOHN W. DRAPER, New York.
12. The Superiority of the Right Side Anus in the Handling of Partial and Complete Obstructions of the Lower Colon and Sigmoid in Cases Unsuited for Radical Operation. JOHN YOUNG BROWN, St. Louis.
13. Pelvic Infection in Women: Notes on Some Features of the Disease. THOMAS J. WATKINS, Chicago.
14. Results Following the Treatment of Pelvic Inflammatory Lesions by Surgical Measures. JOHN G. CLARK and CHARLES C. NORRIS, Philadelphia.

Thursday, June 15—9 a. m.

Election of Officers

15. Inefficient Sterilization: A Possible Cause of Postoperative Infection in Clean Cases. SIDNEY A. CHALFANT, Pittsburgh.
16. Posture in Obstetrics. JAMES W. MARKOE, New York.
17. The Use of Chloroform in the First Stages of Labor. ISADORE L. HILL, New York.
18. The Present Status of the Abdominal Cesarean Section: With Report of Cases. FRANKLIN S. NEWELL, Boston.
19. Obstetric Surgery, A Modern Science: Its Scope and Limitations. EDWARD P. DAVIS, Philadelphia.
20. Meddlesome Midwifery in Renaissance. JOSEPH B. DELEE, Chicago.

Thursday, June 15—2 p. m.

21. Umbilical Hernia and Lipectomy. WALTER LATHROP, Hazleton, Pa.
22. Sheet Rubber Superior to Gauze Sponges in Abdominal Operation. JOHN W. KEEFE, Providence, R. I.
23. Indications for Cholecystectomy. DONALD GUTHRIE, Sayre, Pa.
24. A Report on One Hundred Consecutive Cases of Fibromyomata Uteri Subjected to Operation. STEPHEN E. TRACY, Philadelphia.
25. Operative Treatment of Fibromyomatous Uterine Tumors. JOHN B. DEAVER, Philadelphia.

Friday, June 16—9 a. m.

26. Obstetric Diagnosis. E. GUSTAV ZINKE, Cincinnati.
27. Obstetrics and Gynecology Under Ideal Conditions in a General Hospital. FREDERICK C. HOLDEN, Brooklyn.
28. Recent Progress in the Surgical Treatment of Uterine Cancer. JULIUS H. JACOBSON, Toledo, Ohio.

SECTION ON OPHTHALMOLOGY

MEETS IN BALL ROOM, STATLER HOTEL

OFFICERS OF SECTION

Chairman—WALTER R. PARKER, Detroit.

Vice Chairman—VARD H. HULEN, San Francisco.

Secretary—GEORGE S. DERBY, Boston.

Executive Committee—HIRAM WOODS, Baltimore; FRANK C. TODD, Minneapolis; EDWARD C. ELLETT, Memphis, Tenn.

Members are reminded that the meetings of the section will be called to order promptly on the hour scheduled for opening.

The formal reading of the papers will be omitted, as reprints of the papers on the program have already been delivered to members of the section.

Each essayist will be given ten minutes in which to summarize the points in his paper and introduce the discussion, and five minutes in which to close the discussion.

The member appointed to open the discussion of any paper will be allowed ten minutes. Subsequent speakers will be limited to five minutes.

The papers and all discussions will be printed and bound, forming the Transactions of the Section on Ophthalmology for 1916. Copies of the Transactions may be obtained at $1 each, if subscriptions are sent to THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, 535 North Dearborn Street, Chicago, by July 1, as only enough copies are printed to cover subscriptions received up to the time of going to press.

Members of the section are requested to register in the section registration book at the entrance. The full name and complete postoffice address should be written plainly.

Tuesday, June 13—2 p. m.

1. Chairman's Address. WALTER R. PARKER, Detroit.
2. Syphilitic and Parasyphilitic Optic Nerve Affections. Physiologic Evidences in Favor of an Intracranial Treatment: Researches on Intravital Staining of the Optic Nerve. MARK J. SCHOENBERG, New York.
   Discussion to be opened by UDO J. WILE, Ann Arbor, Mich.
3. A Case of Granuloma Pyogenicum Affecting the Eyelid. CASSIUS D. WESCOTT, Chicago.
   Discussion to be opened by LEE MASTEN FRANCIS, Buffalo.
4. A Study of Ophthalmoscopic Changes in Nephritis. GEORGE SLOCUM, Ann Arbor, Mich.
   Discussion to be opened by ALBERT E. BULSON, JR., Fort Wayne, Ind.
5. The Uses of the Desiccation Method in Ophthalmology, with Special Reference to Epitheliomas of Lids, Canthi and Conjunctiva: Report of Cases (Lantern Demonstration). WILLIAM L. CLARK, M.D., Philadelphia.
   Discussion to be opened by S. LEWIS ZIEGLER, Philadelphia.

Tuesday Evening, June 13

There will be a moonlight water excursion together with the Section on Laryngology, Otology and Rhinology as guests of the Detroit Ophthalmologic and Otologic Club and the Detroit Oto-Laryngological Society. Further information about this can be obtained from the local committee and at the opening session of the section.

Wednesday, June 14—9 a. m.

EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

6. A New Instrument for the Clinical Measurement of Dark Adaptation. HARRY S. GRADLE, Chicago.
7. The Fatigue of Accommodation as Registered by the Ergograph. LUCIEN HOWE, Buffalo.
   Discussion to be opened by HIRAM WOODS, Baltimore.
8. A Primary Intradural Tumor of the Optic Nerve: Removal with Preservation of the Ball. EDWARD C. ELLETT, Memphis, Tenn.
   Discussion to be opened by EDGAR S. THOMSON, New York.
9. Homatropin Glaucoma: Its Occurrence and Prevention. HAROLD GIFFORD, Omaha.
   Discussion to be opened by EUGENE SMITH, Detroit.
10. Traumatic Pulsating Exophthalmos. WILLIAM ZENTMAYER, Philadelphia.
    Discussion to be opened by FRANK E. BURCH, St. Paul.

Wednesday, June 14—2 p. m.

11. The Etiology of Nonparalytic Ocular Imbalance: Some Original Conceptions and Interpretations Based on the Physiology and Psychology of Ocular Movements. WILL WALTER, Chicago.
    Discussion to be opened by G. C. SAVAGE, Nashville, Tenn.
12. Heterophoria in Children. WENDELL REBER, Philadelphia.
    Discussion to be opened by WILBUR B. MARPLE, New York.
13. Strabismus Produced by Operations for Strabismus: A Consideration of Causes Producing Deformities Following Strabismus Operations, with Suggestions for Corrective Operative Procedure. FRANK C. TODD, Minneapolis.
    Discussion to be opened by HARRY W. WOODRUFF, Joliet, Ill.
14. A New Shortening Technic, with Report of Forty-Two Operations. RODERIC P. O'CONNOR, Oakland, Calif.
    Discussion to be opened by WILLIAM CAMPBELL POSEY, Philadelphia.

Thursday, June 15—9 a. m.

Election of Officers

15. The Preparation of the Patient for Operation.
WALTER B. LANCASTER, Boston.
Discussion to be opened by WILLIAM H. WILDER, Chicago.

16. Effects of Heat on the Eye.
WILLIAM E. SHAHAN, St. Louis.
Discussion to be opened by THOMAS B. HOLLOWAY, Philadelphia.

17. Progressive Macular Degeneration in Three Members of a Family. MARCUS FEINGOLD, New Orleans.
Discussion to be opened by JOHN E. WEEKS, New York.

18. Thyroid Extract in the Treatment of Malignant Uveitis.
JAMES BORDLEY, JR., Baltimore.
Discussion to be opened by NELSON M. BLACK, Milwaukee, Wis.

Thursday, June 15—2 p. m.

19. A Comparative Study of the Fundus Oculi, Especially in Birds (Lantern Demonstration).
CASEY A. WOOD, Chicago.

20. Retinal Detachment in Hydrophthalmia.
ARNOLD KNAPP, New York.
Discussion to be opened by DON M. CAMPBELL, Detroit.

21. Discission of Crystalline Lens.
EDWARD JACKSON, Denver.
Discussion to be opened by WILLIAM E. GAMBLE, Chicago.

22. Preliminary Capsulotomy in Immature Cataract.
WILLIAM EVANS BRUNER, Cleveland.
Discussion to be opened by HOMER E. SMITH, Norwich, N. Y.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

MEETS IN CONVENTION HALL, STATLER HOTEL

OFFICERS OF SECTION

Chairman—HILL HASTINGS, Los Angeles.
Vice Chairman—WILLIAM R. MURRAY, Minneapolis.
Secretary—FRANCIS P. EMERSON, Boston.
Executive Committee—ROBERT LEVY, Denver; BURT R. SHURLY, Detroit; NORVAL H. PIERCE, Chicago.

Tuesday, June 13—2 p. m.

1. Chairman's Address: Purulent Infections of the Ear, Nose and Throat. HILL HASTINGS, Los Angeles.

2. Xanthosis and Causes of Septal Bleeding.
CHESTER C. COTT, Buffalo.

3. Further Observations on the Conellan-King Diplococci Throat Infections and Their Sequelae, with Especial Reference to Arthritis (Lantern Demonstration).
JAMES J. KING, New York.
Discussion to be opened by WALT P. CONAWAY, Atlantic City.

4. The Relation of the Ductless Glands to Rhinology.
BURT R. SHURLY, Detroit.
Discussion to be opened by ROBERT LEVY, Denver.

5. The Method of Tonsillectomy by Means of the Alveolar Eminence of the Mandible and Guillotine.
GREENFIELD SLUDER, St. Louis.
Discussion to be opened by G. HUDSON MAKUEN, Philadelphia, and GEORGE PAULL MARQUIS, Chicago.

Wednesday, June 14—9 a. m.

SYMPOSIUM ON CHRONIC SUPPURATION OF THE NASAL ACCESSORY SINUSES

FRONTAL SINUS

6. The Evolution of the Frontal Sinus Operation, with Special Reference to the External Operation.
JOSEPH C. BECK, Chicago.

7. Anatomy of the Frontal Sinuses. LEE M. HURD, New York.

ETHMOID CELLS

8. Ethmoid Empyema: Acute and Chronic.
GEORGE F. COTT, Buffalo.

9. Surgery of the Ethmoid. G. E. SHAMBAUGH, Chicago.

MAXILLARY ANTRUM

10. Surgical Treatment of Chronic Suppuration of the Maxillary Sinus. WILLIAM E. SAUER, St. Louis.

11. Anatomical Variations Bearing on Surgical Treatment of Empyema. HARMON SMITH, New York.

SPHENOID SINUS

12. The Sphenoid Sinuses. HANAU W. LOEB, St. Louis.

13. Operations on the Sphenoid Sinuses.
ROSS H. SKILLERN, Philadelphia.
Discussion to be opened by H. P. MOSHER, Boston.

14. A New Method of Roentgenography of the Sphenoid and Ethmoid Cells by the Oblique Method (Lantern Demonstration). SAMUEL IGLAUER, Cincinnati.

Wednesday, June 14—2 p. m.

SYMPOSIUM ON CHRONIC SUPPURATIVE OTITIS MEDIA

PREVENTION OF OTITIS MEDIA

15. Chronic Middle Ear Suppuration.
GEORGE W. MACKENZIE, Philadelphia.

PRESENT-DAY TREATMENT

16. Nonoperative Treatment of Otitis Media.
NORVAL H. PIERCE, Chicago.

17. Operative Treatment of Otitis Media.
EUGENE A. CROCKETT, Boston.

18. End-Results of Treatment of Otitis Media.
JOHN F. BARNHILL, Indianapolis.
Discussion to be opened by J. A. STUCKY, Lexington, Ky.

19. The Mastoid Operation of Ten Years Ago and Today: Gradual Changes in Operative Methods and Technic. Brief Estimate of the Advance as Measured by Practical Results. PHILIP D. KERRISON, New York.
Discussion to be opened by J. R. PAGE, New York.

20. Vaccine Therapy: Its Possibilities and Limitations.
DAVID J. DAVIS, Chicago.

21. Clinical Experience with Use of Vaccines in Diseases of the Ear, Nose and Throat.
GEORGE M. COATES, Philadelphia.

Thursday, June 15—9 a. m.

Election of Officers

22. The Possibilities and Limitations of Nonsurgical Bronchoscopic Treatment. ROBERT F. RIDPATH, Philadelphia.

23. Possibilities and Limitations of Suspension Laryngoscopy.
ROBERT C. LYNCH, New Orleans.
Discussion to be opened by W. B. CHAMBERLIN, Cleveland.

24. New Solutions of Mechanical Problems of Foreign-Body Bronchoscopy (Lantern Demonstration).
CHEVALIER JACKSON, Pittsburgh.
Discussion to be opened by THOMAS HUBBARD, Toledo, Ohio.

25. Cleft Palate and Hare Lip (Lantern Demonstration).
THOMAS E. CARMODY, Denver.
Discussion to be opened by T. W. BROPHY, Chicago.

26. Correction of External Nasal Deformities by Subcutaneous Method (Lantern Demonstration).
LEE COHEN, Baltimore.
Discussion to be opened by W. W. CARTER, New York.

Thursday, June 15—2 p. m.

27. Clinical Types of Labyrinthitis, with Comments on Treatment. WENDELL C. PHILLIPS, New York.
Discussion to be opened by A. B. DUEL, New York.

28. The Differential Diagnosis Between Purulent Labyrinthitis and Cerebellar Lesions.
ISIDORE FRIESNER, New York.
Discussion to be opened by HORACE NEWHART, Minneapolis.

29. The Importance of Aural Symptoms in the Early Diagnois of Pontile Cerebellar Angle Growths.
WELLS P. EAGLETON, Newark, N. J.
Discussion to be opened by I. H. JONES, Philadelphia.

30. An Exhibition: Temporal Bone Dissections.
WILLIAM M. DUNNING, New York.

SECTION ON DISEASES OF CHILDREN

MEETS IN FIRST PRESBYTERIAN CHURCH

OFFICERS OF SECTION

Chairman—T. C. McCLEAVE, Oakland, Calif.

Vice Chairman—E. P. COPELAND, Washington, D. C.

Secretary—F. P. GENGENBACH, Denver.

Executive Committee—HENRY DWIGHT CHAPIN, New York; FRANK S. CHURCHILL, Chicago; LAWRENCE T. ROYSTER, Norfolk, Va.

Tuesday, June 13—2 p. m.

1. Chairman's Address: Dental Care in Childhood: The Most Neglected Feature of Pediatric Medicine. T. C. McCLEAVE, Oakland, Calif.
2. The Effect of Cold Air on the Blood Pressure in Pneumonia in Childhood. JOHN LOVETT MORSE and DAVID M. HASSMAN, Boston.
3. Grip in Children. LAWRENCE T. ROYSTER, Norfolk, Va.
4. Acidosis. HENRY D. CHAPIN and MARSHALL C. PEASE, JR., New York.
5. Conditions in Infancy and Childhood Associated with the Production of Abnormal Quantities of the Acetone Bodies. JOHN HOWLAND, Baltimore.
6. The Factor of Starvation in the Development of Acetonuria. BORDEN S. VEEDER, St. Louis.

Wednesday, June 14—9 a. m.

7. Report of Five Cases of Tertian Malaria Treated with Organic Synthetic Arsenic Intravenously. FRANK C. NEFF, Kansas City, Mo.

SYMPOSIUM ON SYPHILIS

8. Frequency of Hereditary Syphilis. FRANK S. CHURCHILL, Chicago.
9. Clinical Course and Physical Signs in Hereditary Syphilis. ABNER POST, Boston.
10. Late Hereditary Syphilis. P. C. JEANS, St. Louis.
11. Comparative Studies of the Luetin and the Wassermann Reactions. L. R. DEBUYS and J. A. LANFORD, New Orleans.
12. Treatment of Hereditary Syphilis. PHILIP H. SYLVESTER, Newton Center, Mass.

Wednesday, June 14—2 p. m.

13. Report of Duodenal Ulcer: Operation and Improvement. H. M. McCLANAHAN, Omaha.
14. Chronic Intestinal Disorders of Mechanical Origin in Children. C. G. KERLEY, New York.
14. Roentgen-Ray Findings of Chronic Intestinal Disorders of Mechanical Origin in Children (Lantern Demonstration). L. T. LEWALD, New York.
16. Familial Cyanosis. JULIUS H. HESS, Chicago.
17. The Treatment of Diphtheria Carriers. D. MURRAY COWIE, Ann Arbor, Mich.
18. A Study of the Deaths in Philadelphia During the Past Five Years from Scarlet Fever, Measles, Diphtheria, Whooping Cough and Typhoid Fever. EDWIN E. GRAHAM, Philadelphia.

Thursday, June 15—9 a. m.

Election of Officers

19. Alkali-Earth Alkali Equilibrium in Spasmophilia. CLIFFORD G. GRULEE, Chicago.
20. A Study of Two Hundred and Twenty-Six Cases of Chorea. ISAAC A. ABT, Chicago.
21. Obscure Fever in Infancy and Childhood. EDGAR P. COPELAND, Washington, D. C.
22. The Natural Protection of the Child Against Tuberculosis and Gradual Development of a Specific Cellular Defense. F. M. POTTENGER, Los Angeles.
23. Pediatric Nursing. J. P. SEDGWICK, Minneapolis.
24. Further Study of the Amino Acid Content of the Blood. C. J. PETTIBONE and F. W. SCHLUTZ, Minneapolis.

Thursday, June 15—2 p. m.

25. The Use of Boiled Milk in Infant Feeding. JOSEPH BRENNEMANN, Chicago.
26. The Use of Malt Soup Extract in Infant Feeding. B. RAYMOND HOOBLER, Detroit.
27. The Influence of Diet on the Development and Health of the Teeth. JAY I. DURAND, Seattle.
28. The Regulation of Children's Diet After Infancy. J. H. M. KNOX, JR., Baltimore.
29. Report of Committee on Investigation of Diarrheal Diseases. JOHN LOVETT MORSE, Chairman.
   (*a*) A Study of Diarrheas in Boston for 1915. JOSEPH I. GROVER, Boston.
   (*b*) An Analysis of the Mortality for 1915 in the Infant Welfare Society of Chicago. HENRY F. HELMHOLZ, Evanston, Ill.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN ROOF GARDEN, TULLER HOTEL

OFFICERS OF SECTION

Chairman—R. A. HATCHER, New York.

Vice Chairman—J. R. ARNEILL, Denver.

Secretary—M. I. WILBERT, Washington, D. C.

Executive Committee—TORALD SOLLMANN, Cleveland; RAY L. WILBUR, San Francisco; JOHN F. ANDERSON, New Brunswick, N. J.

Tuesday, June 13—2 p. m.

1. Chairman's Address. R. A. HATCHER, New York.
2. Address of Chairman of the Delegation from the American Pharmaceutical Association. JOSEPH P. REMINGTON, Philadelphia.
3. The Constructive Work of the Council on Pharmacy and Chemistry of the American Medical Association. TORALD SOLLMANN, Cleveland.
4. The Work of the Chemical Laboratory of the American Medical Association. W. A. PUCKNER, Chicago.
5. Useful Drugs. OLIVER T. OSBORNE, New Haven, Conn.
6. The Scope and Content of Useful Drugs. M. W. GLOVER, Washington, D. C.

Wednesday, June 14—9 a. m.

7. The Results of Treatment in Cases of Arterial Hypertension, Due to and Associated with Syphilis. LOUIS A. LEVISON, Toledo, Ohio.
8. The Intensive Treatment of Syphilis. LOYD THOMPSON, Hot Springs, Ark.
9. Diagnosis and Treatment of the Flagellate Diarrheas. ARTHUR N. TASKER, New York.
10. A New Development in Sanatorium Treatment. D. E. DRAKE, New Foundland, N. J.

Wednesday, June 14—2 p. m.

11. Autogenous Colon Vaccines as Used in Chronic Intestinal Toxemia, with Special Reference to Diagnosis and Therapeusis. G. REESE SATTERLEE, New York.
12. The Status of Physical Therapeutics in the Medical College Curriculum of Today. E. L. EGGLESTON, Battle Creek, Mich.
13. Ultimate Results in the Treatment by Artificial Pneumothorax. A. G. SHORTLE, Albuquerque, N. M.
14. The Saponins: Their Distribution, Properties and Uses. CARL L. ALSBERG, Washington, D. C.
15. The Actions and Properties of Some Synthetic Local Anesthetics of the Cocain Type. GEORGE B. ROTH, Washington, D. C.

Thursday, June 15—9 a. m.

Election of Officers

16. The Mechanism of Drug Tolerance. C. W. EDMUNDS, Ann Arbor, Mich.
17. The Rational Handling of Narcotic Addicts. ERNEST S. BISHOP, New York.
18. The Relation of Diet to Pellagra. JOSEPH GOLDBERGER, Washington, D. C.
19. The Relation of Diet to Beriberi and the Present Status of Our Knowledge Relating to Vitamins. E. B. VEDDER, Washington, D. C.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN CONVENTION HALL, TULLER HOTEL

OFFICERS OF SECTION

Chairman—F. P. GAY, Berkeley, Calif.

Vice-Chairman—JAMES EWING, New York.

Secretary—ISABELLA C. HERB, Chicago.

Executive Committee—A. W. HEWLETT, Ann Arbor, Mich.; WILLIAM OPHÜLS, San Francisco; A. J. CARLSON, Chicago.

Tuesday, June 13—2 p. m.

1. Chairman's Address. FREDERICK P. GAY, Berkeley, Calif.
2. The Internal Secretion from the Testes. WINFIELD SCOTT HALL, Chicago.
3. Results of Recent Studies on Some Ductless Glands. WALTER B. CANNON, Boston.
4. Hunger and Disease. A. J. CARLSON, Chicago.
5. Is Uric Acid Destroyed in the Human Body? H. GIDEON WELLS, Chicago.

Wednesday, June 14—9 a. m.

6. Studies On the Effects of Acids. ARTHUR D. HIRSCHFELDER, Minneapolis.
7. Additional Facts Concerning the Protein Poison. VICTOR C. VAUGHAN, Ann Arbor, Mich.

   Discussion to be opened by FREDERICK P. GAY, Berkeley, Calif.
8. Experimental Scurvy in Guinea-Pigs Produced by Milk and Milk Products. LEILA D. JACKSON, Chicago.
9. Roentgenologic Studies of the Gastro-Intestinal Tract in Diabetes. JAMES T. CASE, Battle Creek, Mich.
10. Tissue Transplantation with Reference to Permanence and Function. ORVILLE T. MANLEY, Cleveland.

Wednesday, June 14—2 p. m.

11. The Endamebas of Man and Their Relation to Disease. CHARLES F. CRAIG, Fort Leavenworth, Kan.
12. The Geographic Distribution of Amebiasis. ARTHUR H. SANFORD, Rochester, Minn.

    Discussion to be opened by A. W. HEWLETT, Ann Arbor, Mich.
13. Saccharomycosis. LORENA M. BREED, Pasadena, Calif.
14. A Comparative Study of the Syphilitic, Leprous, Roentgen Ray, Gonorrheal and Mumps Testis. ALDRED S. WARTHIN, Ann Arbor, Mich.

Thursday, June 15—9 a. m.

Election of Officers

15. Tuberculosis of the Mammary Gland. GATEWOOD, Chicago.
16. The Vascular Reactions of the Kidney in Experimental Acute Tartrate Nephritis. HOWARD T. KARSNER, Cleveland.
17. The Resistance of Erythrocytes of Normal Rabbits and the Change in Resistance Produced in Experimental Purpura. J. H. MUSSER, JR., Philadelphia.

SECTION ON STOMATOLOGY

MEETS ON CONVENTION HALL FLOOR, PONTCHARTRAIN HOTEL

OFFICERS OF SECTION

Chairman—FREDERICK B. MOOREHEAD, Chicago.

Vice Chairman—ARTHUR D. BLACK, Chicago.

Secretary—EUGENE S. TALBOT, Chicago.

Executive Committee—S. L. MCCURDY, Pittsburgh; VIRGIL LOEB, St. Louis; WILLIAM C. FISHER, New York.

Tuesday, June 13—2 p. m.

SYMPOSIUM ON THE PRINCIPLES INVOLVED IN CHRONIC MOUTH INFECTIONS IN THEIR RELATION TO GENERAL DISEASES

1. Chairman's Address: The Prevalence of Chronic Mouth Infections and Their Management. FREDERICK B. MOOREHEAD, Chicago.
2. The Principles Involved in Chronic Infections. FRANK BILLINGS, Chicago.
3. The Bacteriology of Chronic Infections. EDWARD C. ROSENOW, Rochester, Minn.
4. Focal Infections and Dental Disease: Treatment and Results from Medical Standpoint. ERNEST E. IRONS, Chicago.

Wednesday, June 14—2 p. m.

SYMPOSIUM ON INTERSTITIAL GINGIVITIS AND PYORRHEA ALVEOLARIS

5. Bacterial Findings and Their Relationship to Pyorrhea Alveolaris and Interstitial Gingivitis. ALEXANDER W. LESCOHIER, Detroit.
6. The Roentgen Ray in Diagnosis. HOLLIS E. POTTER, Chicago.
7. The Importance of a Correct Differential Diagnosis of the Predisposing Causes in Cases of Interstitial Gingivitis or Pyorrhea Alveolaris. MEYER L. RHEIN, New York.
8. Some Studies in the Treatment of Pyorrhea Alveolaris. GEORGE B. HARRIS, Detroit.
9. The Etiology and Treatment of Interstitial Gingivitis. EUGENE S. TALBOT, Chicago.

   Discussion on Interstitial Gingivitis and Pyorrhea Alveolaris to be opened by ARTHUR BLACK, Chicago, and JOSEPH HEAD, Philadelphia.

Thursday, June 15—9 a. m.

Election of Officers

10. Ankylosis of the Temporomandibular Joint (Lantern Demonstration). CHALMERS J. LYONS, Ann Arbor, Mich.
11. A Clinical Pathologic Study of Malignant Conditions About the Face, Mouth and Jaws. JOHN W. MEANS and JONATHAN FORMAN, Columbus, O.
12. Surgical Procedures Enhancing the Retention of Artificial Dentures, with Report and Illustrations of an Unusual Case. HERBERT A. POTTS, Chicago.
13. A Study of the Lymphatics of the Dental Pulp. FREDERICK B. NOYES, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN Y. M. C. A.

OFFICERS OF SECTION

Chairman—GEORGE A. MOLEEN, Denver.

Vice Chairman—M. A. BLISS, St. Louis.

Secretary—A. S. HAMILTON, Minneapolis.

Executive Committee—HOWELL T. PERSHING, Denver; W. W. GRAVES, St. Louis; FRANCIS X. DERCUM, Philadelphia.

Tuesday, June 13—2 p. m.

1. Chairman's Address: The Nervous System as Influenced by High Altitudes. GEORGE A. MOLEEN, Denver.
2. Tumors of the Third and Fourth Ventricles. PETER BASSOE, Chicago.
3. A Study of Anatomic Location and Histopathology of Ninety-Seven Brain Tumors. FRED B. CLARKE, Milwaukee, Wis.
4. A Further Note on the Diagnostic Value of Retrobulbar Neuritis in Expanding Lesions of the Frontal Lobes. R. FOSTER KENNEDY, New York.
5. Some Clinical Studies of the Problems of Cerebral Tone. CHARLES K. MILLS, Philadelphia.
6. Cerebellar Localization: An Experimental Study by a New Method. I. LEON MEYERS, Chicago.

Wednesday, June 14—9 a. m.

7. The Significance of Innumerable Minor Seizures. BERNARD SACHS, New York.
8. Epilepsy, with Special Reference to Treatment. FRANCIS X. DERCUM, Philadelphia.
9. The Progressive Torsion Spasm. J. RAMSAY HUNT, New York.

10. The Factor of Fear in Nervous Cases.
HUGH T. PATRICK, Chicago.
11. Syphilitic Psychoses Associated with Manic Depressive Symptoms and Course.
A. M. BARRETT, Ann Arbor, Mich.
12. The So-Called Lucid Interval in Manic Depressive Psychosis: Its Medicolegal Importance.
ALFRED GORDON, Philadelphia.

Wednesday, June 14—2 p. m.

13. Spinal Fluid Findings Characteristic of Cord Compression. JAMES B. AYER and HENRY R. VIETS, Boston.
14. Constitutional Inferiority in the Light of Modern Conceptions. M. J. KARPAS, New York.
15. Experimental Studies of Injection of the Gasserian Ganglion Controlled by Fluoroscopy.
LEWIS J. POLLOCK, Chicago.
16. Technic and Indications for Alcoholic Injection of the Seventh Nerve. G. M. DORRANCE, Philadelphia.
17. Myasthenia Gravis. WILLIAM A. JONES, Minneapolis.
18. A Contribution to the Pathogenesis of Progressive Muscular Dystrophy, with the Consideration of Evidence Connecting This Disease with Disturbances in the Endocrine Glands.
WALTER TIMME and PEARCE BAILEY, New York.

Thursday, June 15—9 a. m.

Election of Officers

19. Conjugal Paresis: Report of a Case.
HARRY H. DRYSDALE, Cleveland.
20. Hereditary Syphilis as a Cause of Chronic Invalidism.
HENRY F. STOLL, Hartford, Conn.
21. The Early Diagnosis of Tabes Dorsalis.
WALTER F. SCHALLER, San Francisco.
22. Shall We Treat the Paretic?
CHARLES E. RIGGS and E. M. HAMMES, St. Paul.
23. A Consideration of the Serobiologic Reactions After Five Years of Observation. CHARLES R. BALL, St. Paul.
24. Mercurial Medication with Spinal Drainage.
L. B. PILSBURY, Lincoln, Neb.

Thursday, June 15—2 p. m.

25. Traumatic Hysteria in Its Relation to Corporation Employees. W. BROWN EWING, Salt Lake City.
26. A Clinical Study of Unusual Symptoms in Hemiplegia and Diplegia. THEODORE H. WEISENBURG, Philadelphia.
27. Hormone, Reflex and Symbolic Interrelationships in Diseases of the Nervous System.
SMITH ELY JELLIFFE, New York.
28. A New Treatment of Paralysis Agitans.
WALTER B. SWIFT, Boston.
29. A Contribution to the Pathogenesis of the Migraines.
TOM A. WILLIAMS, Washington, D. C.
30. Necessity of Revising the Nomenclature of the Anatomy of the Central Nervous System.
WILLIAM FULLER, Grand Rapids, Mich.

SECTION ON DERMATOLOGY

MEETS ON CONVENTION HALL FLOOR, PONTCHARTRAIN HOTEL

OFFICERS OF SECTION

Chairman—HOWARD MORROW, San Francisco.

Vice Chairman—EVERETT S. LAIN, Oklahoma City.

Secretary—H. H. HAZEN, Washington, D. C.

Executive Committee—JOSEPH ZEISLER, Chicago; RICHARD L. SUTTON, Kansas City, Mo.; HOWARD FOX, New York.

Tuesday, June 13—2 p. m.

1. Chairman's Address: The Teaching of Dermatology.
HOWARD MORROW, San Francisco.
2. Ringworm of the Hands and Feet.
OLIVER S. ORMSBY and JAMES HERBERT MITCHELL, Chicago.
3. Condyloma Acuminatum of the Anal Region.
A. RAVOGLI. Cincinnati.
4. Dermatologic Dietetics.
ERNEST DWIGHT CHIPMAN, San Francisco.
5. Erythrodermia Congenitale Ichthyosiforme:
GEORGE MILLER MACKEE, New York.
6. Unusual Affections of the Skin and Mucous Membranes (Lantern Demonstration).
JOHN A. FORDYCE, New York.

Wednesday, June 14—9 a. m.

SYMPOSIUM ON NEOPLASMS

7. The Etiologic Rôle of Scar Tissue in Skin Cancer.
MEYER L. HEIDINGSFELD, Cincinnati.
8. The Treatment of Epithelioma.
CLARENCE J. BROEMAN, Cincinnati.
9. The Treatment of Malignant Disease About the Mouth, by Combined Methods (Lantern Demonstration).
GEORGE E. PFAHLER, Philadelphia.
10. Radium in the Treatment of Cancer and Various Other Diseases of the Skin (Lantern Demonstration).
FRANK EDWARD SIMPSON, Chicago.
11. Leukemia Cutis: Report of a Case.
SAMUEL E. SWEITZER, Minneapolis.

Wednesday, June 14—2 p. m.

SYMPOSIUM ON SYPHILIS

12. Some Phases of Experimental Syphilis, with Special Reference to the Question of Strains.
CAPT. MATHEW A. REASONER, Washington, D. C.
13. Report of a Series of Sixty-One Extragenital Chancres.
HAROLD N. COLE, Cleveland.
14. The Dyschromias of Syphilis.
RICHARD L. SUTTON, Kansas City, Mo.
15. An Analysis on One Hundred and Twenty-Five Cases of Tertiary Syphilis, with Particular Reference to Their Early Treatment.
UDO J. WILE and JOSEPH A. ELLIOTT, Ann Arbor, Mich.
16. The Administration of Dioxydiamido Arsenobenzol Dichlorhydrate by Mouth to Man and Animals.
JAY FRANK SCHAMBERG, JOHN A. KOLMER and GEORGE W. RAIZISS, Philadelphia.
17. A Comparative Study of Salvarsan and Neosalvarsan in the Treatment of Syphilis.
WILLIAM B. TRIMBLE and JOHN J. ROTHWELL, New York.
18. Notes on the Teaching and Treatment of Syphilis.
H. G. IRVINE, Minneapolis.

Thursday, June 15—9 a. m.

Election of Officers

SYMPOSIUM ON ECZEMA

19. The Pathology and Pathogenesis of Eczema in Dermatitis: The Identity of the Two Diseases.
WALTER JAMES HEIMANN, New York.
20. Eczema of External Causation.
FRANK CROZIER KNOWLES, Philadelphia.
21. The Significance that can be Attached to Food Tests in Relation to the Causation of Eczema.
CHARLES J. WHITE, Boston.
22. Eczema of the Nipple in the Female.
DOUGLASS W. MONTGOMERY, San Francisco.

Thursday, June 15—2 p. m.

23. Impetigo Contagiosa in the Adult.
GEORGE D. CULVER, San Francisco.
24. Local Infection in Relation to Dermatology.
M. L. RAVITCH, Louisville, Ky.
25. Gastro-Intestinal Findings in Acne Vulgaris.
LLOYD W. KETRON and JOHN H. KING, Baltimore.
26. Pityriasis Lichenoides Chronica: A Clinical and Microscopic Study. FRED WISE, New York.
27. A Contribution to the Rarer Forms of Lichen Planus.
DAVID LIEBERTHAL, Chicago.
28. Itching as a Symptom.
PHILIP KILROY, Springfield, Mass.

Friday, June 16—9 a. m.

Presentation of Dermatologic Cases at Harper Hospital.
H. R. VARNEY, ANDREW P. BIDDLE and UDO J. WILE.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

MEETS ON SECOND FLOOR, CADILLAC HOTEL

OFFICERS OF SECTION

Chairman—WILLIAM C. RUCKER, Washington, D. C.
Vice Chairman—JAMES ADAMS HAYNE, Columbia, S. C.
Secretary—O. P. GEIER, Cincinnati.
Executive Committee—GUY L. KIEFER, Detroit; M. P. RAVENEL, Columbia, Mo.; C. HAMPSON JONES, Baltimore.

Tuesday, June 13—2 p. m.

1. Chairman's Address: The Health Education of the General Public. W. C. RUCKER, Washington, D. C.

SYMPOSIUM ON HEALTH ADMINISTRATION

2. Municipal Health Administration. ERNEST C. LEVY, Richmond, Va.
3. The Administration of Maritime Quarantine. LELAND E. COFER, Washington, D. C.
4. District Health Organization. C. ST. CLAIR DRAKE, Springfield, Ill.
5. County Health Organization. WATSON S. RANKIN, Raleigh, N. C.
6. Health Laboratory Organization. WILLIAM H. PARK, New York.

Wednesday, June 14—9 a. m.

7. Report of Committee on Industrial Sanitation. J. W. KERR, Washington, D. C.; SIDNEY MORRILL MCCURDY, Youngstown, O.; OTTO P. GEIER, Cincinnati.

SYMPOSIUM ON HEALTH PROBLEMS IN INDUSTRY

8. Industrial Medicine and Surgery—The New Specialty. HARRY E. MOCK, Chicago.
9. Medical Supervision of Factory Employees; Result of Five Years' Experience. W. IRVING CLARK, JR., Worcester, Mass.
10. Medical Supervision of Street Railway Employees. CHARLES H. LEMON, Milwaukee, Wis.
11. Bad Teeth and Their Effect on the Workman's Efficiency. CARL E. SMITH, Akron, Ohio.
12. The Relation of Health Insurance to National Health. BENJAMIN S. WARREN, Washington, D. C.
13. The Relation of Health Insurance to the Wage Earner. I. M. RUBINOW, New York.

Thursday, June 15—9 a. m.

Election of Officers

SYMPOSIUM ON THE SANITATION OF FOOD SUPPLIES

14. Sanitation of Farm Sources of Food Supply. L. L. LUMSDEN, Washington, D. C.
15. Sanitation of the Shellfish Industry. H. S. CUMMING, Washington, D. C.
16. Sanitation of Markets. DONALD B. ARMSTRONG, New York.
17. The Quantitative Relationship of Milk Borne Infection in the Transmission of Human Communicable Diseases. EUGENE R. KELLEY, Boston.

SECTION ON GENITO-URINARY DISEASES

MEETS IN CONVENTION HALL, PONTCHARTRAIN HOTEL

OFFICERS OF SECTION

Chairman—LOUIS E. SCHMIDT, Chicago.
Vice Chairman—FRANCIS M. MCCALLUM, Kansas City, Mo.
Secretary—W. F. BRAASCH, Rochester, Minn.
Executive Committee—HUGH H. YOUNG, Baltimore; ARTHUR L. CHUTE, Boston; GRANVILLE MACGOWAN, Los Angeles.

Tuesday, June 13—2 p. m.

1. Studies in Sterility: An Outline of a Method of Diagnosis and Treatment. VICTOR D. LESPINASSE, Chicago.
2. A Further Report on the Operative Treatment of Sterility in the Male: Tabulation of Cases in Which Operation Was Performed. FRANCIS R. HAGNER, Washington, D. C.
3. The Operative Treatment of Cryptorchidism. EDWARD L. KEYES, JR., and DAVID W. MACKENZIE, New York.
4. Gangrenous Periurethritis. J. DELLINGER BARNEY, Boston.
5. Diverticulum of the Urethra. SIMON ENGLANDER, Cleveland.
6. The Chemistry of the Gonococcus in Relation to Immunity and Therapeusis. CARL C. WARDEN, Ann Arbor, Mich.
7. The Hecht-Weinberg Test As a Control Over the Wassermann. R. B. H. GRADWOHL, St. Louis. Discussion to be opened by M. L. HEIDINGSFELD, Cincinnati.

Wednesday, June 14—9 a. m.

8. Reflex Urinary Retentions. ARTHUR B. CECIL, Los Angeles.
9. Certain Obstructions at the Vesical Orifice. OSWALD S. LOWSLEY, New York.
10. Cancer of the Prostate. GRANVILLE MACGOWAN, Los Angeles.
11. Preliminary Treatment Before Prostatectomy in Unfavorable Cases. HUGH H. YOUNG, Baltimore.
12. The Postoperative and Convalescent Period of Prostatectomy. J. BENTLEY SQUIER, JR., New York.
13. Postoperative Treatment of Patients Following Prostatectomy. JAMES A. GARDNER, Buffalo. Discussion to be opened by PAUL M. PILCHER, Brooklyn.
14. Postoperative Complications Following Prostatectomy. J. L. CRENSHAW, Rochester, Minn.

Wednesday, June 14—2 p. m.

15. Chairman's Address. LOUIS E. SCHMIDT, Chicago.
16. Colon Bacillus Pyelonephritis: Its Nature and Possible Prevention. ERNEST G. CRABTREE and HUGH CABOT, Boston.
17. Pyelitis of Children. WILLIAM C. QUINBY, Baltimore.
18. Hematuria: A Clinical Study Based on Two Hundred Cases. HERMAN L. KRETSCHMER, Chicago. Discussion to be opened by W. F. BRAASCH, Rochester, Minn.
19. The Acute Surgical Kidney. LEWIS WINE BREMERMAN, Chicago. Discussion to be opened by G. SHEARMAN PETERKIN, Seattle.
20. Ureteral Catheter Drainage in the Treatment of Renal Infections: With Special Reference to the Infected Hydronephrosis Complicating Pregnancy. JOHN R. CAULK, St. Louis.

Thursday, June 15—9 a. m.

Election of Officers

21. Surgical Therapy of Benign and Malignant Tumors of the Bladder. EDWIN BEER, New York. Discussion to be opened by H. H. YOUNG, Baltimore.
22. Frequency of Urination in Women. HENRY G. BUGBEE, New York. Discussion to be opened by W. F. BRAASCH, Rochester, Minn.
23. Cystoscopic Diagnosis of Contracted Bladder. MARTIN KROTOSZYNER, San Francisco.
24. Clinical Aspects of Ascending Renal Infection Based on Experimental Work. DANIEL N. EISENDRATH, Chicago. Discussion to be opened by L. E. SCHMIDT and G. KOLISCHER, Chicago.
25. Fat Transplantation in Renal and Prostatic Surgery. IRVIN S. KOLL, Chicago. Discussion to be opened by G. KOLISCHER, Chicago.
26. Further Observations on the Use of Thorium in Pyelography. J. EDWARD BURNS, Baltimore.

Thursday, June 15—2 p. m.

27. Removal Versus Drainage of the Seminal Vesicles. A. C. STOKES, Omaha.
28. Rôle of Infection of Seminal Vesicles as a Cause of Persistent and Recurring Cystitis. JOHN T. GERAGHTY, Baltimore.
29. Seminal Vesicle Infections: The Cause of Persistent Urethral Discharge: Report of Cases. ROBERT H. HERBST, Chicago.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN INSTITUTE BUILDING, BAPTIST CHURCH

OFFICERS OF SECTION

Chairman—RUSSELL A. HIBBS, New York.
Vice Chairman—E. W. RYERSON, Chicago.
Secretary—EMIL S. GEIST, Minneapolis.
Executive Committee—NEWTON M. SHAFFER, New York; LEONARD W. ELY, San Francisco; NATHANIEL ALLISON, St. Louis.

Tuesday, June 13—9 a. m.

1. Chairman's Address: The Problem of the Chronic Cripple. RUSSELL A. HIBBS, New York.
2. Osteoclasis and Osteotomy. WALLACE BLANCHARD, Chicago.
   Discussion to be opened by J. TORRANCE RUGH, Philadelphia, and HERBERT P. GALLOWAY, Winnipeg, Man.
3. Calcified Hematoma: A Study of the Pathology. FREDERICK C. KIDNER, Detroit.
   Discussion to be opened by D. B. PHEMISTER, Chicago.
4. The Treatment of Infantile Paralysis. ROBERT W. LOVETT, Boston.
   Discussion to be opened by E. W. RYERSON, Chicago.
5. Astragalectomy (Whitman's Operation) in Infantile Paralysis. WILLIAM R. MACAUSLAND, Boston.
   Discussion to be opened by CHARLTON WALLACE, New York, and FREDERICK C. KIDNER, Detroit.
6. The Prognosis in Infantile Paralysis. WALTER G. STERN, Cleveland.
   Discussion to be opened by ARTHUR STEINDLER, Iowa City, Iowa.

Wednesday, June 14—9 a. m.

7. Localized Osteospondylitis. WILLIS C. CAMPBELL, Memphis, Tenn.
   Discussion to be opened by ROBERT SOUTTER, Boston, and FREDERICK J. GAENSLEN, Milwaukee, Wis.
8. Syphilitic Bone and Joint Lesions Simulating Tuberculosis. ARTHUR L. FISHER, San Francisco.
   Discussion to be opened by HENRY W. FRAUENTHAL, New York, and JAMES T. WATKINS, San Francisco.
9. A Statistical Study of the Hospital and Educational Needs of Cripples in the United States. H. WINNETT ORR, Lincoln, Neb.
10. Results of Research on Conditions Affecting Posture. HENRY LING TAYLOR, New York.
    Discussion to be opened by J. E. GOLDTHWAIT, Boston.
11. Mechanical Derangements of the Knee Joint. MELVIN S. HENDERSON, Rochester, Minn.
    Discussion to be opened by JOHN L. PORTER, Chicago, and WILLIS C. CAMPBELL, Memphis, Tenn.
12. A Plea for the Prevention of Deformities Following Burns. CHARLES A. PARKER, Chicago.
    Discussion to be opened by JOHN P. LORD, Omaha.

Wednesday, June 14—2 p. m.

13. Sciatica: An Analysis of Fifty Cases. MARK H. ROGERS, Boston.
    Discussion to be opened by LEONARD W. ELY, San Francisco.
14. Fat Embolism in Bone Surgery: Incidence and Control. E. W. RYERSON, Chicago.
    Discussion to be opened by WILLIAM E. BLODGETT, Detroit.
15. Orthopedic Surgery in War Time. ROBERT B. OSGOOD, Boston.
    Discussion to be opened by NATHANIEL ALLISON, St. Louis.
16. The End-Results of Joint Tuberculosis from the Records of the New York Orthopedic Dispensary and Hospital. ROBERT E. HUMPHRIES and HERBERT A. DURHAM, New York.
    Discussion to be opened by JOHN RIDLON, Chicago.
17. The Evolution of Osteochondritis Deformans Coxae Juvenilis. ALBERT H. FREIBERG, Cincinnati.
    Discussion to be opened by J. R. KUTH, Duluth, Minn.
18. Hereditary Deforming Chondrodysplasia—Multiple Cartilaginous Exostoses. ALBERT EHRENFRIED, Boston.
    Discussion to be opened by THOMAS R. BOGGS, Baltimore, and R. T. VAUGHAN, Chicago.

Thursday, June 15—9 a. m.

Election of Officers

19. Compression Paralysis of Potts' Disease in Adults. CHARLES M. JACOBS, Chicago.
    Discussion to be opened by CLARENCE B. FRANCISCO, Kansas City, Mo.
20. Ankylosing Operations on the Spine. LEONARD W. ELY, San Francisco.
    Discussion to be opened by FRED H. ALBEE, New York.
21. The Operative Treatment of Tuberculosis of the Spine. NATHANIEL ALLISON and HERBERT H. HAGAN, St. Louis.
    Discussion to be opened by JOHN L. PORTER, Chicago.
22. A Report of Two Cases of Scoliosis with Pressure Paraplegia. JOHN RIDLON, Chicago.
    Discussion to be opened by ARTHUR J. GILLETTE, St. Paul.
23. New Methods of Precision in the Treatment of Fractures. GEORGE W. HAWLEY, Bridgeport, Conn.
    Discussion to be opened by FRED H. ALBEE, New York.
24. The Treatment of Some Fractures of the Femur. FRANK E. PECKHAM, Providence, R. I.
    Discussion to be opened by F. J. COTTON, Boston.

THE COMMERCIAL EXHIBIT AT DETROIT

A Display of Almost Everything the Practicing Physician Needs in his Professional Work—A Feature of Decided Value to Every Conventionist

The commercial exhibit will be held in the Detroit Armory (northwest corner of Brush and Larned streets), on the ground floor and in the east wing of the balcony. On the ground floor also will be found the registration and information bureau and the postoffice, and in the south and west wings of the balcony, the scientific exhibits.

As in the past, the commercial exhibits will afford the conventionist an opportunity to make a practical inspection close at hand of new books, instruments, Roentgen-ray outfits, office and hospital furniture, new and improved miscellaneous equipment, and the newer medical biologic and therapeutic products.

Fellows who attend the session should make it a point to go to the exhibit hall daily, as it will be practically impossible in one or two visits to inspect everything and receive the maximum benefit from the demonstrations that will be given.

The visiting physician is urged to feel absolutely free to examine each exhibit without thinking that he is expected to buy. The men who will be in charge of the booths are competent in their respective lines, and their main object will be to give intelligent information and satisfactory demonstrations of whatever commodity they are showing. They will be delighted to cooperate with the profession, to employ new suggestions and to interchange opinions as to the worthiness of the articles under demonstration. In this way, mutual benefit will result both to the physician and to the firm represented.

It is the aim of the American Medical Association to make the commercial exhibits of educational value. They can be consistently termed "commercial," only from the facts that the articles shown can be bought and that the manufacturer profits by increased patronage after his article has made a correct impression on the physician from a "scientific" standpoint.

Dr. John N. Bell, 33 East High Street, Detroit, is local chairman of the Commercial Exhibits, and Will C. Braun, 535 North Dearborn Street, Chicago, is superintendent of exhibits.

Following is a classified list of exhibitors:

LIST OF EXHIBITORS

Analegsic Gas-Oxygen Apparatus

Space

Clark & Co., A. C., Chicago..... 72
Foregger Co., The, New York..... 108
Teter Manufacturing Co., Cleveland..... 31
Toledo Technical Appliance Co., Toledo..33-84

Apparatus, Instruments and Furniture

Allison Co., W. D., Indianapolis.....94-95
Bard, Charles R., New York..... 46
Betz Co., F. S., Hammond, Ind...27-28-29-39-40
De Vilbiss Mfg. Co., Toledo..... 85
Geiger, Dr. Chas., St. Joseph, Mo..... 100
Hartz Co., J. F., Detroit..... 42
Jaeckh Mfg. Co., Cincinnati..... 80
Kuhlman & Co., A., Detroit..... 53-54
Mueller & Co., V., Chicago.....15-16
Wilson & Wilson, Boston..... 105

Orthopedic and Supportive Appliances

Ambulatory Pneumatic Splint Mfg. Co., Chicago 79
Anatomik Footwear Co., New York..... 113
Berger Bros. Co., New Haven, Conn..... 35
International Corset Co., Aurora, Ill...103-104

Automobile Equipment

Gearless Differential Co., Detroit..... 106

Educational

New York Post-Graduate Medical School and Hospital, New York..... 111

Electro-Medical and Diagnostic Appliances

Chicago Surgical & Electric Co., Chicago. 67
Electro-Surgical Instrument Co., Rochester, N. Y..... 60
Hanovia Chem. & Mfg. Co., Newark, N. J. 9
Weder Mfg. Co., Philadelphia..... 88

Foods, Analeptics and Milk Preparations

Borcherdt Malt Extract Co., Chicago..... 47
Borden's Cond. Milk Co., New York..51-69-70
Horlick's Malted Milk Co., Racine, Wis..90-91
Johnson & Co., Mead, Evansville, Ind.... 38
Mellin's Food Co., Boston..... 1
Waukesha Health Products Co., Waukesha, Wis. 109
Welch Grape Juice Co., Westfield, N. Y.. 11

Medical Books

Appleton & Co., D., New York..... 87
Blakiston's Son & Co., P., Philadelphia... 34
Chicago Medical Book Co., Chicago..... 5
Davis Co., F. A., Philadelphia..... 89
Hoeber, Paul B., New York..... 7
Lea & Febiger, Philadelphia..... 6
Lippincott Co., J. B., Philadelphia..... 2-3
MacMillan Co., The, Chicago..... 110
Mosby Medical Book & Publishing Co., St. Louis 32-33
Rebman Co., New York..... 17
Saunders Co., W. B., Philadelphia.....18-19
Wood & Co., Wm., New York..... 4

Office Coats and Hospital Uniforms

Weissfeld Bros., New York..... 81

Microscopes and Ophthalmic Specialties

Bausch & Lomb Optical Co., Rochester, N. Y. 30
General Optical Co., Inc., New York..... 52
Hardy & Co., F. A., Chicago.....96-97-98-99
Meyrowitz, E. B., Inc., New York.....36-37
Woolf, Michael, New York..... 86

Pharmaceutic, Biologic and Immunizing Products

Abbott Laboratories, The, Chicago.....44-55
Armour & Co., Chicago..... 93
Hynson, Westcott & Co., Baltimore..... 10
Maltine Co., The, Brooklyn..... 8
Mulford Co., H. K., Philadelphia.....20-21
Sherman, Dr. G. H., Detroit..... 25
Squibb & Sons, E. R., New York..... 50
Standard Oil Co., Chicago..... 12

Roentgenographic Apparatus

Space

Campbell Electric Co., Lynn, Mass.....56-57
Fischer & Co., H. G., Chicago..... 45
Meyer Co., Wm., Chicago.....62-63-64
Scheidel Western X-Ray Co., Chicago..26-41
Snook-Roentgen Mfg. Co., Philadelphia... 24
Victor Electric Co., Chicago.....75-76-77-78
Vulcan Coil Co., Los Angeles..... 13
Wappler Electric Mfg. Co., New York...48-49

Resuscitating Devices

Life Saving Devices Co., Chicago.....58-59

Sanatoriums and Health Resorts

Albuquerque Cham. of Com., N. M..... 68
The "Colonial," Mt. Clemens, Mich..... 71
Silver City Chamber of Com., N. M.... 61

Sanitary Baby Clothing

Earnshaw Knitting Co., Chicago..... 66

Waterproof Sheeting Fabrics

Waterproof Fabric Co., Chicago..... 112

Sterilizers

Castle Co., Wilmot, Rochester, N. Y..... 74

Sphygmomanometers and Thermometers

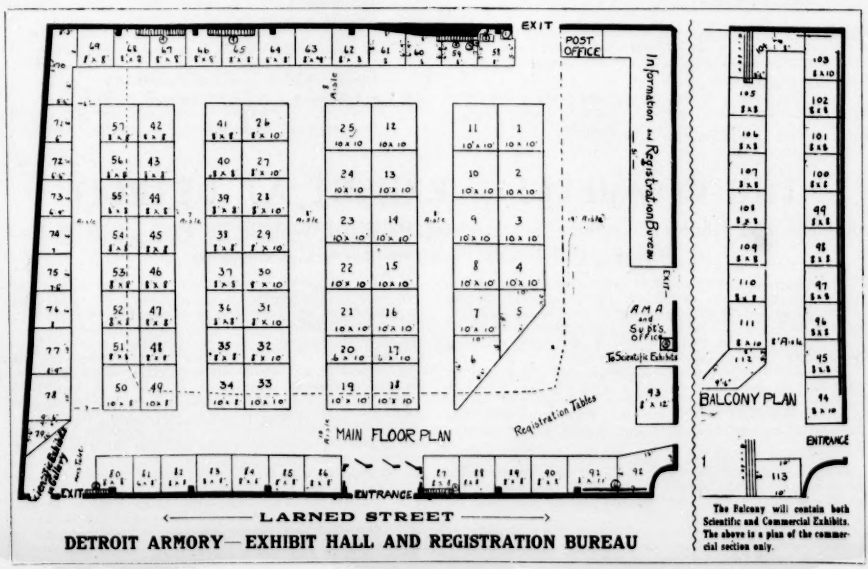
R. & E. Mfg. Co., Cleveland..... 65
Taylor Instr. Co., Rochester, N. Y.....14-22

Radium Preparations

Radium Chemical Co., Pittsburgh..... 22

X-Ray Tubes, Plates, Etc.

Brady & Co., Geo. W., Chicago..... 82
Eastman Kodak Co., Rochester, N. Y..... 92
Green & Bauer, Inc., Hartford, Conn.... 73
Macalaster-Wiggin Co., Boston..... 43
Machlett & Sons, E., New York..... 101



DETROIT ARMORY—EXHIBIT HALL AND REGISTRATION BUREAU

The Balcony will contain both Scientific and Commercial Exhibits. The above is a plan of the commercial section only.